TD 4.32:26/981/Ch.5

CHANGE

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

7110.80A CHG 5

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SUBJ: DATA COMMUNICATIONS

1. PURPOSE. This change transmits revised pages for Order 7110.80A, Data Communications.

2. EXPLANATION OF CHANGES. The significant changes are listed below. If further information is desired, contact AAT-140.

a. 68. DISCRETE REGIONAL CALLS. Deletes the Rocky Mountain Region and adds the correct regional names -- Western-Pacific and Northwest Mountain.

b. 69. LAW ENFORCEMENT ALERT MESSAGE SUMMARY. Corrects the Office of Air Transportation Security to the Office of Civil Aviation Security.

c. 86. NORTHWEST MOUNTAIN REGION (ANM) MESSAGE CENTER (RSE). Corrects the regional name.

d. 87. WITHDRAWN-- CHG 5. Deletes the paragraph pertaining to the Pacific Region Message Center (RCCC).

e. 88. WITHDRAWN-- CHG 5. Deletes the paragraph pertaining to the Rocky Mountain Message Center (RDE).

f. 91. WESTERN-PACIFIC REGION (AWP) MESSAGE CENTER (RLA). Corrects the regional name.

g. 93. MESSAGE CENTER TIE-IN FACILITY OPERATION. Deletes the Pacific Region RCCC and the Rocky Mountain RDE. Corrects the names of the Northwest Mountain and Western-Pacific Regions.

h. 114. WITHDRAWN-- CHG 5. Deletes the paragraph pertaining to message numbering and BDIS computerized acknowledging.

i. 156. IFR FLIGHT PLANS AND CONTROL MESSAGES. Clarifies the intent with respect to the mandatory or optional nature of remarks (Field 11).

j. 222. WMSC CIRCUIT MANAGEMENT. Replaces 215/RPC with 215/HNL.

k. 280. CIRCUIT 005 (GT 08001-005). Changes MTN "(by HAR)" to "(by DCA)."

l. 283. CIRCUIT 008 (GT 08002-008). Changes GMU "(by GRR)" to "(by GSP)."

Distribution: ZAT-709 (ALL)

Initiated By: AAT-100

READEX FICHE

TD 4.32:

m. 319. CIRCUIT 044 (LGCA 7134) (ALL STATIONS ALASKA). Deletes "Cape" from Cape Yakataga.

n. 339. CIRCUIT 215 (1404). Deletes RPC, the Pacific Regional Office Message Center.

o. 446. GENERAL (Flight Advisories (SIGMET WS--AIRMET WA, WAC)). Changes the active storage time for WS reports (SIGMETS) from 240 to 360 minutes.

p. 500. FT--AVIATION TERMINAL FORECASTS (ALASKAN--DOMESTIC--HAWAIIAN). Adds GCN.

q. 510. SA--HOURLY AVIATION WEATHER (DOMESTIC). Adds HYS.

r. 515. SA--HOURLY AVIATION WEATHER (ALASKAN). Changes "UMN" to "UMM."

s. 581. WMSC DATA BASE. Updates the weather collectives.

3. EFFECTIVE DATE. This change is effective 5/13/82.

4. PAGE CONTROL CHART.

REMOVE PAGES	DATED	INSERT PAGES DATED 5/13/82
iii	10/1/81	iii through xi
iv through ix	1/1/81	
x	1/21/81	
xi	1/1/81	
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26	1/21/82	
27	4/1/81	
28	1/1/81	
31 through 36	1/1/81	31 through 38
37 and 38	1/21/82	
55	1/21/82	55 and 56
56	1/1/81	
64 and 65	1/21/82	64 and 65
74	1/21/82	74 through 78
75	4/1/81	
76 through 78	1/21/82	
91	1/21/82	91
100	7/1/81	100

REMOVE PAGES	DATED	INSERT PAGES DATED 5/13/82
101 through 103	1/21/82	101 through 103
105	1/21/82	105 and 106
106	1/1/81	
113 through 125	1/21/82	113 through 123

R. J. VAN VUREN
Director, Air Traffic Service

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APPENDIXES

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Appendix B—Standard ATS Messages and their Composition
Appendix C—International Telegraph Alphabet No. 2
Appendix D—Service A Drawing M-14
Appendix E—Q Signals for use on the Domestic Teletypewriter Circuits

→ 68. DISCRETE REGIONAL CALLS

The discrete regional call assignments are:

Southern Region (Atlanta)	XTL
New England Regional (Boston)	XBW
Great Lakes Region (Chicago)	XGC
Southwest Region (Fort Worth)	XFE
Central Region (Kansas City)	XKC
Western-Pacific Region (Los Angeles)	XLA
Eastern Region (New York)	XNY
Northwest Mountain Region (Seattle)	XST

→ 69. LAW ENFORCEMENT ALERT MESSAGE SUMMARY

A monthly summary of current law enforcement alert messages shall be issued as a Service B GENOT by the Office of Civil Aviation Security. It shall be given GG precedence and list all effective alerts by aircraft registration number, type and identification of the originating FSS. Alerts which have been cancelled since the last summary shall also be listed.

Example:

RWA GG XXB
NOUS2 KRWA 151700
GENOT RWA 1/158 SVC B
GG ALRGN 90/200/500 NA90 AC90/250 ALATFAC ALGADO ALACDO ALFSDO
LAW ENFORCEMENT ALERT SMRY NOV 71
STOLEN ACFT
N1234P C150 ROA
N1234Z C150 ROA
N3421F PA28 DCA
N3421P PA28 DCA
CUSTOMS ALERTS
N3484M PA32 AMA
N8263U MO21 DAL
CNL
N5456Z N5802F N8920Z N9737P
KROHN ACS-400

70. FUEL ADVISORY DEPARTURE (FAD) OPERATIONS

When the ATCCC declares that FAD procedures are in effect all stations will be alerted by XXB message. The message will include the terminal affected and effective dates and times. At completion of alert an XXB FAD complete message will be transmitted. (See para. **113, 156a(6)**.)

71. DISCRETE GROUP CODES

A-BDIS employs a group addressing capability to allow message delivery to multiple locations, based on a single address. Examples of this application are GENOT/RENOT/NASCOM/ALCKT type messages. Four facilities (ATL/DCA/IND/MCN) can neither originate nor be addressed with these group codes. They must be addressed individually on all messages.

72-76. RESERVED

Section 7. MESSAGE CENTER OPERATION

77. GENERAL

Administrative messages are handled at the Aeronautical Center, the FAA Technical Center, Regional Offices, and Washington Headquarters by message centers. Where message centers are not fully manned all the time, an associated tie-in facility transmits administrative traffic during other than business hours. Upon messages in putted by tie-in facilities, the BDIS computer will automatically generate acknowledgements back to the tie-in facilities, which serve as acknowledgements from the message centers.

78. AERONAUTICAL CENTER (AAC) MESSAGE CENTER (OEX)

Reserved.

79. ALASKAN REGION (AAL) MESSAGE CENTER, REGIONAL COMMUNICATIONS CONTROL CENTER (RCCC)

Messages to Alaska Region Communications Control Center shall be addressed to "PANCYA". Include as the first item of the text the reference number of the Division or Branch.

80. CENTRAL REGION (ACE) MESSAGE CENTER (RKC)

The Central Region Communications Control Center and Message Center operates daily 0600–2200, local time; the printer is unattended 2200–0600 local time.

Route all messages to Regional Communications Control Center and Message Center. Numbered messages addressed to RKC will be acknowledged by the Message Center when it reopens at 0600.

81. EASTERN REGION (AEA) MESSAGE CENTER (RNY)

a. The Eastern Region Message Center hours of operation are 0800–1630, local time, Monday through Friday. All traffic transmitted to RNY outside of these hours of operation must carry the condition code "TEB" in addition to "RNY".

b. Messages addressed to Eastern Region personnel having offices at Washington National or Dulles International Airports shall be numbered to DCA at all times. Such messages shall also be addressed to RWA only if they also are destined to NTSB or other FAA offices.

82. EUROPEAN, AFRICA, AND MIDDLE EAST REGIONAL OFFICE (AEU) MESSAGE CENTER

Reserved.

83. GREAT LAKES REGION (AGL) MESSAGE CENTER (RGC)

The Great Lakes Region Message Center is operational with 24-hour monitoring by the Regional Duty Officer.

84. FAA TECHNICAL CENTER (ACT) MESSAGE CENTER (ACY)

Personnel of the message center at the FAA Technical Center will not normally attend Area B circuit 9252 between the hours of 0300–1100 daily. Printers will be left in the operating mode during unattended periods. ACY will no longer be required to acknowledge for the FAA Technical Center traffic sent during unattended periods after 1100Z due to automatic generating of acknowledgements by the computer back to the transmitting facility of traffic destined to the FAA Technical Center.

85. NEW ENGLAND REGION (ANE) MESSAGE CENTER (RBN)

The New England Region Communications Message Center hours of operation are 0800–1800, local time, Monday through Friday of the administrative work week. Acknowledgments are made by the tie-in facility "BOS" for messages received when "RBN" is not manned by telecommunications personnel. Monitoring is performed by the Regional Duty Officer during the hours of operation of the RCCC.

→ 86. NORTHWEST MOUNTAIN REGION (ANM) MESSAGE CENTER (RSE)

The Northwest Mountain Region Message Center is operational from 0600 to 2200, local time, Monday through Saturday and from 1200 to 2000, local time, on Sundays and holidays. Printers are unmonitored during the time the office is closed. Messages may be addressed to RSE at any time; acknowledgements will be sent only when the message center is operational.

→ 87. WITHDRAWN—CHG 5

→ **88. WITHDRAWN—CHG 5**

89. SOUTHERN REGION (ASO) MESSAGE CENTER (RTL)

The Southern Region Message Center hours of operation are 0830–1800, local time, Monday through Friday, except holidays, with 24-hour monitoring by the Regional Duty Officer.

90. SOUTHWEST REGION (ASW) MESSAGE CENTER (RFW)

The Southwest Region Message Center is operational with 24-hour monitoring. Condition code "RFW" on all classes of messages.

→ **91. WESTERN-PACIFIC REGION (AWP) MESSAGE CENTER (RLA)**

The Western-Pacific Region Message Center hours of operation are 0600–1600, local time, Monday through Friday, with 24-hour monitoring by the Regional Duty Officer. Traffic destined for the Western-Pacific Region, or transmitted by the tie-in facility (LAX) when the message center is not manned by telecommunications personnel, will be automatically acknowledged for by the BDIS computer. All traffic transmitted outside of the hours of operation must include the conditioning code "LAX" in addition to "RLA".

92. WASHINGTON OFFICE (ATF) MESSAGE CENTER (RWA)

Include as the first item of the text the routing symbol of the office for which the message is intended.

→ **93. MESSAGE CENTER TIE-IN FACILITY OPERATION**

Address and route message traffic to the appropriate tie-in facility as shown in Table 1 below.

TABLE 1. MESSAGE CENTER AND TIE-IN FACILITIES

Message Center	*Tie-in Facility*	*Method of Locally Handling Traffic*
Aeronautical Center OEX	None. 24 hour opn	Hand carry
Alaskan Region RCCC	None. 24 hour opn	Hand carry
Central Region RKC	None. Unattended printer 2200–0600 (Local) daily	Hand carry
Eastern Region RNY	Teterboro FSS TEB	Pony circuit
European, Africa, Middle East Region	N/A	N/A
Great Lakes Region RGC	None. 24 hour opn	Hand carry
Technical Center ACY	None. Unattended printer 0300–1100 daily	Hand carry
New England Region RBN	Boston FSS BOS	Service B
Northwest Mountain Region RSE	None.	Hand carry
Southern Region RTL	None. 24 hour opn	Hand carry
Southwest Region RFW	None. 24 hour opn	Hand carry
Western-Pacific Region RLA	Los Angeles FSS LAX	Service B
Washington Office RWA	None. 24 hour opn	Hand carry

94–102. RESERVED

g. Appropriate acknowledgements or rejection notices will be generated by BDIS immediately following the retrieval request (see above examples). The last sent/received report response follows:

Example:

120976 2124 REQSTD
TRMNL TZKC LR 008
QUEVE ZKC LS 024

NOTE.—Example indicates that on December 9, 1976 at 2124 ZKC sent a total of 8 messages and received 24 since the start of a new radio day or BDIS start up.

h. BDIS circuit numbers and corresponding program channel number follows:

WU-353(030)	FA-3256(031)	GT9047(006)
GT-9056(007)	GT-9251(008)	GT-9255(009
GT-9256(010)	GT-9260(011)	GT-9266(012)
GT-9268(013)	GT-9272(014)	GT-9273(015)
GT-9277(016)	GT-9278(017)	GT-9282(018)
GT-9283(019)	GT-9285(020)	GT-9286(021)
GT-9293(022)	GT-9299(023)	7GT301(024)
7GT-314(025)	5GT-8560(026)	5GT-8561(027)
GT-9250(106)	GT-9252(107)	GT-9254(108)
GT-9258(109)	GT-9261(110)	GT-9262(111)
GT-9264(112)	GT-9270(113)	GT-9274(114)
GT-9275(115)	GT-9276(116)	GT-9280(117)
GT-9281(118)	GT-9284(119)	GT-9288(120)
GT-9290(121)	GT-9292(122)	GT-9295(123)
GT-8140(036)		

111. AUTOMATIC BDIS RELAY OPERATIONS AND CIRCUITRY

(Alaska and Pacific—Not applicable)

Each Area B circuit extends into the automative BDIS computerized control facility. This facility relays all traffic between Area B circuits and from Area B to Supplemental B circuits. The operational functions listed below are performed automatically by the BDIS electronic computer which operates as a real-time store-and-forward message switch.

a. Upon receipt, will automatically store and forward messages without delay on the 100 wpm multipoint half-duplex circuits and the 1200 and 2400 BPS medium speed line.

b. Automatic routing of single or multiple addressed messages using three (3) or four (4) character routing address indicators for intra-system routing. In addition, the detection of either six (6) or eight (8) character routing addresses will cause the message to be delivered to the AFTN computer system for appropriate routing action.

c. Arrange messages without delay and in the proper order of assigned priorities, following receipt of end of message (EOM) signal to all output lines. (Ref. para. 137 and Table 1—Priority of Messages).

d. Automatic sequential numbering and recording of both incoming and outgoing messages on all low-speed, half-duplex lines to assure a constant record of all traffic.

e. Automatic routing of all messages found with deficiencies detected within the message envelopes back to the originator. If the originator cannot be determined, the rejected message will be routed for ALCKT distribution back to the circuit of origin. All rejected messages will be preceded by an appropriate error statement.

NOTE.—Since the computer does not search the text of a message, it is imperative that operation personnel adhere to and not deviate from texual and/or message transmissions standards. (Ref. para. 25, 109)

f. Automatic format conversion and transmission of all Service B formatted messages to AFTN.

g. Automatic routing and transmission of systemwide and all circuit type addressed messages.

h. Automatic conversion and transmission of all AFTN messages on low speed limits.

i. Continuous monitoring and warning via control console of special system conditions such as:

(1) System overload.
(2) Circuit failure.
(3) Equipment failures.
(4) Excessive circuit delays.
(5) Readout of system/circuit status upon request.

j. Message acquisition on Service B half-duplex circuits by automatic weighted/continuous polling.

112. BDIS CIRCUIT DESCRIPTION

a. (52)—100 WPM multipoint half-duplex polled circuits with separate input/output sequence numbers which are assigned and maintained by the BDIS computer for each Service B drop on each of these circuits.

b. (8)—100 WPM full-duplex point-to-point non-polled circuits. These circuits are required for the BDIS and AFTN systems interface. Separate output sequence numbers for each of these circuits are maintained by the BDIS computer.

c. (1)—2400 BPS full-duplex synchronous medium-speed line which provide a date link or interfaces with the BDIS and AFTN computers.

d. (2)—1200 BPS full-duplex asychronous medium-speed lines to ATL/AWANS and DCA/MAPS systems.

113. USE OF UNIVERSAL CALL "XXB"

(Alaska and Pacific—Not Applicable)

Use of this code is restricted to NKA and selected headquarters offices, and will be rejected by the computer from other sources. Use combinations of all circuit codes to get the required Area B distribution. Authorized locations will use the standard conditioning code in preparation of tapes. Distribution of XXB messages will be made to all Area B circuits by BDIS.

→ 114. WITHDRAWN—CHG 5

115. OUTAGE FLASH

Alternate routings specified in each outage flash will vary, depending upon the type and extent of the outage. Follow implicitly the routing specified in each outage flash.

116. BDIS COMPUTERIZED GENERATED OUTAGE MESSAGE

(Alaska and Pacific—Not Applicable)

When a line failure occurs between an Area B circuit and NKA BDIS control, a computer generated message alerting facilities of possible delays will be generated. Upon restoration, the facilities will also be advised. Delays would only be encountered due to additional loading on the low-speed relay's adjacent circuit.

117. FAILURE OF OTHER SERVICE B COMPONENTS

When other components of the Service B system fail, take the following action:

a. If the printing-suppression feature of the Model 28 printer fails, restore operation by changing the printer to the local position. Scan all circuit material for messages addressed to the facility. Use spare equipment, where provided, when the printer fails completely.

b. If a T/D fails to respond when polled by the BDIS computer, change the printer to the local position and watch the scan. When your scan call appears, start the T/D manually. This shall be done immediately to avoid interrupting the scan.

c. In the event of a total failure, each circuit has a designated alternative scanning station. These stations shall use a previously prepared tape containing all of the circuit station calls, appropriately notched so that the tape will stop after each call is transmitted. Each call shall consist of the proper codes, followed by enough letters impulses to complete the transmission. Manually transmit this tape at approximately five-minute intervals. These stations shall assume the scanning function as necessary.

118. CIRCUIT OR IDENTIFIER CHANGE

Changes to Service B circuit boundaries, CDC/TSC coding, and addition or stations require documentation in accordance with Order 1800.8D, National Airspace System Configuration Management. Case file action will be initiated by the Facility, Region or AAT-100 depending on the source of the requirement for the action. Completion of the action will be announced by Service B GENOT prepared by AAT-100. In addition the paragraph on use of Facility Status Report (RIS: AT7230-12) In the Facility Operations and Administration Handbook 7210.3 (Chap. 3, Section 4) shall be followed.

119. TAPE PREPARATION AND TRANSMISSION

a. Begin with a series of letters, (paper tape leader) end the tape with a series of letters, (paper tape trailer). Insert the tape so that letters will be transmitted. The trailer should be long enough to allow the EOM (NNNN) to clear the T/D.

(1) For Intracircuit delivery only—condition (< < V) each select identifier (on circuit). Do not use alignment (< <≡) between select codes. Use the alignment function following the last select code prior to the address line.

(2) For Intercircuit delivery only—do not condition select codes, these codes are required on the address line only. Following the tape leader start the address line with the alignment function (< <≡).

(3) Multiple messages in one transmission shall be limited to ten. Six line feeds are required prior to EOM for all messages except the last message in a multiple transmission. Six line feeds required following the last message of a multiple transmission.

(4) Single message transmission shall have two line feed prior to EOM.

b. The EOM (NNNN) must end each message. If EOM is missing BDIS will not effect delivery.

c. *Alaska*—Refer to AL Region Supplement (7110.10) Appendix 1.

120. BDIS AUTOMATIC MESSAGE REJECTION

The automatic BDIS switching system will reject all messages that are not prepared properly. The errored message with an appended computer generated explanation will be returned to the originator. The originator must retype the errored message correctly or the BDIS computer will continue to reject the transmission. ARTCC 9020 rejection notices and acknowledgements take precedence over BDIS internally generated notices and acknowledgements. The following BDIS internally generated notices will be transmitted as explanations for errored transmissions:

a. SVC QTA RPT IORG—The originator on the address line is in error. This explanation can result from the following errors:

(1) The orginators identifier is invalid.

(2) The originators identifier is not valid for this circuit.

(3) A space does not follow the originators identifier.

(4) Alignment functions detected following other than the last select code on an intracircuit message.

b. SVC QTA RPT IADR—The address line contains one or more invalid addressees. This can result from.

(1) An invalid address indicator.

(2) A space missing between address indicators.

(3) More than nine address indicators on one line.

c. QTA RPT IEOM—The end of message is in error. This can result from:

(1) A short EOM (less than 4Ns).

(2) The EOM is garbled or contains nonprinting functions.

d. SVC QTA RPT IPRI—The priority indicator is in error. This can result from:

(1) Invalid priority indicators.

(2) A space missing after the priority indicators.

e. SVC QTA RPT IFMT—The start of address line cannot be detected. This can result from:

(1) Teletypewriter functions CR CR LF being missing or garbled immediately prior to the address line.

Garbled text will not cause BDIS to reject transmissions. Messages rejected because of IGOR or IEOM will cause the BDIS computer to select all stations on the circuit of origin. This is necessary because BDIS will be unable to determine the message originator. Care must be taken to prepare messages correctly or circuit time will be wasted.

121. BDIS COMPUTERIZED TRANSMITTER START CODE (TSC) POLL AND FUNCTIONS

The TSC poll generated by the BDIS computer calls the outlying facility T/D's. It operates continuously, pausing between calls only long enough to permit T/D's with traffic to respond. Since the TSC poll will hold only for its pre-set period (from 3 to 5 seconds) between calls, the tape must be in the T/D when the scan call is received. Once a transmission is completed, the TSC poll will immediately call the next station; therefore, messages must be perforated on a continuous tape if more than one is to be transmitted per call. The end-of-tape pin, when released, will shut off the T/D. Model 28 printers release the printing suppression feature when the T/D responds to a scan call, thus producing a copy of the transmission.

122. SCAN OF RECORDS CENTERS ON SERVICE B

(Alaska—Not Applicable)

Records Centers will be polled by the responsible circuit control station on a daily basis, be-

tween the hours 1400Z and 1500Z only. This time period will allow adequate testing of records center teletypewriter equipment.

a. Upon Declaration of FAA Readiness Level Charlie, including equivalent simulated level, begin continuous scanning of all Records Centers.

b. Scan records centers at any time when directed or requested to do so by AAT-300 or records center personnel.

123. NASNET CIRCUIT OPERATION

NASNET provides communications between National Field Support Group (NFSG) at the FAA Technical Center and FAA automation systems in the field.

a. Authorized transmissions—use these circuits to handle:

(1) Interfacility transmission of NAS support data.

(2) FAA administrative messages.

b. Circuit Utilization—All station or other multiple addressed messages will normally be transmitted by NFSG between 2000Z to 2130Z Monday through Friday except for holidays. All equipment should be in the 'line' or 'unattended' mode during these hours.

c. Circuit Operation—Model 33 ASRs are operated in the 'line' mode and Model 35s are operated in the 'unattended" mode except when in the 'off line' mode for tape preparation. NASNET is polled by a line control switcher (LCS) located at Kansas City IATSC (KMKM). A special format and ASCII code is used on NASNET, consequently, no relay can be accomplished between NASNET and other Service B circuits.

d. Equipment—Model 33 and 35 ASRs consist of basic ASR equipment, an attendant control set, and a station controller. The controller performs the routine on-line functions required from other stations. All system dialogue is between the LCS and station controller. No condition, call directing, or transmitter start codes are operator appended. The controller responds to polling and call-ins, provides parity detection, activates control codes contained in the message format, and provides alarms and alarm indications. The 'out of service' key is used when changing paper, tape, or ribbon.

e. Tape Preparation and Transmission—Prepare tape for transmission as follows:

(1) 10 to 15 deletes.

(2) Start-of-heading (SOH) signal (Ctrl A).

(3) Message priority code (usually J)

(4) 8-letter address indicators.

(5) Alignment function (<≡).

(6) 6-figure date-time group.

(7) 8-letter originator indicator.

(8) Alignment function (<≡).

(9) Start-of-text (STX) signal (Ctrl B).

(10) Text—72 characters per line. 2880 characters maximum length (heading and text), each line of text followed by alignment function (<≡), last line of text followed by carriage return and 8 line feeds (<8≡).

(11) End-of-text (ETX) signal (Ctrl C).

(12) End-of-transmission (EOT) signal (Ctrl D).

(13) 10 to 15 deletes.

Example:

15 V Ctrl A J > KDENZTAT > KZDVZRAF <≡
141615 > KACYZQAT <≡
Ctrl B (text) <8≡
Ctrl C Ctrl D 7 V

Insert the tape in the TD so that one or more of the deletes will be transmitted. When the message has been transmitted, do not remove tape from TD until a response is received from the LCS (ACK or NAK) and the SEL light goes out.

f. Line Control Switcher (LCS) Functions—The LCS polls the outlying facilities, provides intra and inter-circuit relays, determines receipt (ACK) or non-receipt (NAK) at destinations and advises sending station status of acknowledgements. The LCS also monitors message inputs and indicates to originator acceptance or rejection of a message and reason for rejection. When a message is relayed with parity errors both the transmitting and receiving stations are advised.

g. Message Acceptance—accept only messages in written form, prepared in accordance with FAA edition of the U.S. Correspondence Manual (Handbook 1360.6) except that message format for NASNET must be followed.

124. REDUCTION OF TRANSMISSIONS DURING PERIODS OF NATIONAL EMERGENCY OR EXCESSIVE CIRCUIT LOADING (CODE NAME-MINIMIZE)

During specified conditions, imposition of MINIMIZE shall be applied to Area B circuits of the national Service B system to expedite the delivery of time critical messages. When MINIMIZE is in effect, only those messages essential to flight movement and control, mission accomplishment or safety of life and property may be transmitted on or relayed to the applicable circuit or circuits. Defer the transmission of administrative and other less urgent traffic on the circuit or circuits of concern until MINIMIZE has been discontinued.

a. MINIMIZE/NCS will be used to designate a national emergency (actual or simulated) affecting all Area B circuits concurrently. The Air Traffic Service will impose, cancel, or modify MINIMZE/NCS by GENOT or XXB procedures.

b. MINIMIZE/FAA designates imposition of the above restrictions on a circuit-by-circuit basis. NKA BDIS will impose MINIMIZE/FAA when the computer generated TSC poll cycle exceeds 8 minutes and will cancel MINIMIZE/FAA when the TSC poll cycle time returns to less than 8 minutes.

Examples:

RWA FF XXB
MINIMIZE/NCS PROCEDURES IN EFFECT.
REFER TO 7110.80–124.
RWA 271424

NKA FF XXB

ALCKT 002 MINIMIZE/FAA PROCEDURES IN EFFECT ON CKT 9284. RESTRICT MESSAGES FOR CKT TO FLIGHT MOVEMENT FLIGHT CONTROL MISSION ACCOMPLISHMENT SAFETY OF LIFE/PROPERTY. REFER TO 7110.80–124.

NKA 271424
NKA FF XXB

ALCK 004 MINIMIZE/FAA PROCEDURES DISCONTINUED ON CKT 9284. RESUME NML TFC TO 9284.

NKA 271521.

125–135. RESERVED

142. AIRMAN RECORD MESSAGES

Transmit Airman Record Messages as shown in the following example.

Example:

(Alaska—Use ICAO message format.)

MFR JJ OEX
MEM 004 RWA T FS800. G H L X JOHN HENRY DOE
MEDFORD OR
TEER GADO 301303
NNNN

143. OPERATIONAL MESSAGES EXCEEDING 20 LINES

a. Messages exceeding 20 lines shall be prepared in accordance with paragraph **49.**

a. If a message is garbled, the destination facility shall request a repeat of the garbled part.

Example:

RNO DD RLA
QSMB 021 PART 2 031722

c. The originator shall repeat only the part, requested by re-entering the message, requested by the requesting facility:

144. COMBINED DOMESTIC/AFTN MESSAGES

(Pacific—Not Applicable)

Use the following format when transmitting messages which originate on the Service B system and which are destined for facilities on both the AFTN and Service B systems. Messages which require delivery to destinations through the AFTN system must be prepared so that the ICAO address indicators will appear first in the address line. The following examples will illustrate automatic conversion of both inter and intracircuit delivery by the computer of domestic traffic to ICAO format for ICAO delivery to the AFTN system.

Example: (illustrated intercircuit delivery)

≡<< ⩛ KA >> (TSC poll generated by BDIS computer)
<<≡MKC FF EGGGYF EHAMYF JFK BOS<<≡
(text)
EOM<<≡≡NNNN
(automatic conversion to AFTN)
FF EGGGYF EHAMYF KJFKYF KBOSYF<<≡
221540 KMKCYF<<≡
(text)

Example: (illustrates intracircuit delivery)

≡< ⩛ KA >> (TSC poll generated by BDIS computer)
<< ⩛ COU<< ⩛ VIH (header line required for intracircuit delivery only)
<<≡MKC FF EGGGYF EHAMYF COU VIH JFK BOS<<≡
(text)
EOM<<≡≡NNNN
(automatic conversion to AFTN)
FF EGGGYF EHAMYF KCOUYF KVIHYF KJFKYF KBOSYF<<≡
221640 KMKCYF<<≡
(text)

145-155. RESERVED

Section 3. MOVEMENT MESSAGES

156. IFR FLIGHT PLANS AND CONTROL MESSAGES

(Pacific—See Pacific Supplement)

Transmit all proposed IFR flight plan messages to the ARTCC within whose control area IFR flight is proposed to begin.

a. Communications Functions:

(1) Each center shall maintain a list of stations which have been adapted for full response capability. All stations which normally input flight plans to the center should be on the listing.

(2) Flight plan data messages shall be addressed to the computer only. All other types of messages for ARTCC attention shall be addressed to the teletypewriter position only. No message shall be addressed to both.

NOTE.—This restriction does not apply to messages concerning FAD designated Airports when FAD procedures are in effect and departure ARTCC is on the same circuit at the filing station. (See subparagraph (6) below).

Acknowledgements for all numbered messages will be received from the computer or the Center TTY position indicating receipt by the ARTCC but not necessarily computer acceptance.

(3) The ARTCC teletypewriter position shall acknowledge for all flight data messages when the computer is non operational and shall assist the Primary A position in recovery of non-accepted flight plan data messages.

(4) The teletypewriter position shall monitor computer inputs and responses during periods of circuit failure outlined in paragraphs **114, 115** and **116.** An acknowledgement will be transmitted to any station, utilizing the alternate routing chart (para. **118**) which cannot receive the computer response due to circuit or BDIS relay failure. Recovery of any rejected flight plans for these stations will be accomplished within the center.

(5) When more than one teletypewriter address is used in the message, only one may be a computer address and it shall be the last address. This restriction does not apply to ICAO formatted flight plans.

(6) When ATCCC has advised the FAD (Fuel Advisory Departure) procedures are in effect and the departure ARTCC is on your area circuit the TTY position must be addressed and the computer address shall be separated from the previous address by a Space only. Do not use the condition code (CR CR LTR). When the departure ARTCC is not on your area circuit, normal addressing sequence, coding and restrictions apply.

Example:

Message from ATL FSS *on circuit* 9262 *for departure from* ZCT *(also on circuit* 9262*) center area:*

©©/ZTL©©≡
ATL⊟FF⊟DCC⊟ZCT©©≡
(text)©©≡≡NNNN

b. Format:

(1) Adhere to a fixed order of data. Do not exceed the stated maximum number of characters or elements allowed for each field in messages addressed to an ARTCC computer. Flight plans filed containing more than the stated character maximums should be sent using the ARTCC teletypewriter address.

(2) One teletypewriter space character must be entered at the end of each data field. The following clarifications are presented:

(a) The first data field of a message need not be preceded by a space.

(b) The last data field of a message need not be followed by a space.

(3) Each field of data is composed of one or more elements. Discrete elements of information within a field are separated by delimiters, generally slashes (oblique stroke) or periods.

(4) Input errors may be corrected in one of the following manners:

(a) Messages addressed using ARTCC computer address:

(1) The single letter X used as a field causes deletion of the previous field (except remarks). Successive X letter fields may be used for multiple deletions. Thus (space) X (space) X (space) causes the deletion of the two preceding fields.

(2) Within the route of flight (field 10), the single letter X, used as an element, causes deletion of the preceding element. Successive X-letter elements are used for multiple deletions. Thus, .X.X. causes deletion of the two preceding elements.

(3) The inclusion of CXX (preceded and followed by a space) in an input message will delete the entire message. The position of the CXX within the input message has no significance, except that CXX will not be recognized within remarks (field 11).

(4) A typing error may be corrected in computer input flight plans by backspacing to the preceding space character and lettering out the error, except that lettering out of the error shall not exceed 4 letters impulses. If a typing error is made in any character through field 00, discard the tape and retype the flight plan.

(b) Messages addressed using ARTCC teletypewriter address:

(1) These messages are handled by facility personnel; for this reasaon do not use the techniques described in (a) (1), (a) (2) and (a) (3) above. The prime consideration shall be readability of the transmitted data.

(5) All domestic flight data processing computers have the capability to return acknowledgements to the source, and depending on local adaption, return error messages and accept amendments. Adaption is provided on a local basis, generally being based on the level of activity with the inputting station. Notify the appropriate ARTCC Data Systems Specialist or Primary A position when it is suspected that a flight plan has been erroneously rejected by the computer.

(6) When two or more IFR flight plans (stopover) are proposed for the same aircraft, separate messages to the appropriate ARTCCs are required. Treat flights proposing to proceed to an airport and delay in the local area without landing before proceeding to the final destination in the same manner and include appropriate remarks in the separate messages.

(7) Flight plan messages relayed through ARTCCs to terminal facilities may be entered as a single message, when all of the following conditions are met;

(a) The entire flight will remain within the terminal airspace

(b) No full stop landings are involved

(c) Appropriate remarks are included

(8) Some fields contain the necessary functions to operate the teletypewriter stuntboxes and computer teletypewriter adapters, and are designated by alpha characters. Do not separate these fields with spaces.

c. The complete message contents, the order of data, the number of characters allowed within any data field or element, and any associated operational procedures or restrictions are as follows:

(1) *(Alaska—Not Applicable) Start of Message Code (Field A)*—Three characters required first in every message, composed of carriage return, carriage return, line feed.

(2) *(Alaska – Not Applicable) Preamble Line (Field B)*—Consisting of originator, priority, and addressee(s).

(3) *End of Line Function (Field C)*—Same as (1) above.

(4) *Source Identification (Field 00)*—Nine or ten characters required, followed by a space character in the following order:

(a) The three character address of the originating FSS or two character identifier of the originating airline office.

(b) Four characters (digits) to indicate time (in GMT) the flight plan was composed by the originator.

(c) Three characters (digits) representing the number of the message, e.g., "021". Begin number series daily at 0000Z. Alaska—number IFR flight plans in accordance with para. **114.**

NOTE.—There are no spaces between (a), (b) and (c) above.

(5) *Message Type (Field 01)*—The letters "FP" followed by a space character.

(6) *Aircraft Identification (Field 02)*—Consists of two to seven characters, followed by a space character. The first character of the identification must be a letter.

(a) Phrases such as "Flynet", "Snow Time," etc., which do not identify specific aircraft but are supplemental data defining a special mission or function shall be contained in remarks (field 11).

(b) For those foreign aircraft identifications with a numeric as the first character, insert an X as the first character, and explain in the remarks section.

(7) *Aircraft Data (Field 03)*—Consists of two to nine characters followed by a space character. Aircraft data within the field may vary from one to three elements consisting of:

(a) Number of aircraft (when more than one) and/or heavy aircraft indicator "H". This element contains a maximum of two characters followed by a slash.

Examples:

2/
H/
3H/
10/

(b) Type of Aircraft. This element is mandatory and contains two to four characters consisting of the authorized aircraft designator as contained in the FAA Contractions Handbook (7340.1). Enter military designators of aircraft omitting prefixes and suffixes pertaining to aircraft mission or model.

(c) Equipment Suffix. This element is optional and consists of a slash followed by one letter which is one of the approved designators identifying transponder and/or navigation gear.

(8) *Airspeed (Field 05)*—Consists of two to four characters followed by a space character. This field shall indicate the filed true airspeed in knots.

(9) *Departure Point or Coordination Fix (Field 06)*—Consists of two to twelve characters followed by a space character. This field contains the departure point or fix at which an airfile will pick up IFR. It must be a fix, not an airway, and for proposed departures must duplicate the first element of the route of flight (field 10). For airfiles, it must duplicate the fix following the element, VFR, in the route of flight.

(10) *Proposed Departure Time (Field 07)*—Consists of five characters followed by a space character. This field contains the letter "P" followed by a four digit time group (in GMT).

(11) *Requested Altitude (Field 09)*—Consists of two to seven characters followed by a space character. Altitudes or flight levels, as appropriate, shall be expressed in hundreds of feet but without leading zeros. The letters "OTP" shall be entered in this field to indicate a requested altitude of VFR conditions on top. Blocked altitudes are indicated by entering the lower altitude of the requested block, the letter "B," and the higher altitude of the block (e.g., 80B100, 240B270) with no intervening spaces.

(12) *End of Line Sequence (Field D)*—Three characters, composed of carriage return, carriage return, line feed. The first occurrence of field D shall always follow field 09 of the message. Any time a subsequent end of line sequence becomes necessary, if used within field 10, it must be preceded by the appropriate element separator (not a space). If used within field 11, field D may be entered at any point within the remarks sequence.

(13) *Route of Flight (Field 10)*—The route of flight consists of departure point, the route of flight, and normally a destination; followed by a space character:

(a) Field 10 is a fixed sequence field and must begin with a fix (e.g., fix. airway. fix. airway., etc.). The last element may be a fix or one of the route elements VFR, DVFR, or XXX. An element is separated from another element by a period character.

(b) When consecutive fix elements or route elements are filed, the fixed sequence format is maintained by inserting two period characters between the filed field 10 elements (e.g., fix..fix or airway..airway).

(c) When a pilot files an airway..airway combination, obtain, if possible, the point of transition and insert it in the transmitted flight plan. If the point of transition is not named, insert the first named fix encountered along the second airway within the route immediately following the second airway and repeat the second airway following the fix (e.g., SGF.J105..J24.-STL.J24.). The foregoing does not apply if the first encountered fix happens to be the next filed junction point within the route.

(d) The slash character (/) is used to file a latitude/longitude fix or in describing ETE.

(e) The maximum number of filed field elements for computer addressed flight plans is 40 (32 in flight plans transmitted to ZCC, ZCN and ZCW). Double period insertions do not count against the 40 element limitation. Transmit flight plans filed exceeding the route element limitation to the ARTCC, not its computer.

(*1*) Fix Descriptions—A fix must be filed in one of the following ways:

(a) *Fix Name*—Domestic, Canadian and International identifiers of two to five alphanumeric characters.

(b) *Fix Radial Distance*—Consists of eight to eleven alphanumeric characters in the following sequence—two to five characters identifying a navigational aid, three characters of azimuth expressed in degrees magnetic, and three characters of distance expressed in nautical miles from the navigational aid. Zeros preceding a significant character shall be entered before the azimuth and distance components as required to assure the transmission of three characters for each.

(c) Latitude/Longitude—Consists of nine to twelve characters entered as follows—the latitude shall appear as the first component as four numbers (trailing zeros required) with an optional letter "N" or "S" appended. If the optional letter is omitted, North is understood. Latitude shall be separated from longitude with a slash (/) element separator. Longitude shall appear as the second component as four or five digits (trailing zeros required, leading zero optional) with an optional letter "W" or "E" appended. If the optional letter is omitted, West is understood.

(2) Route Descriptions—A route must be filed in one of the following ways:

(a) *Airway*—The official airway designator must be filed.

(b) *Coded Routes*—Coded routes are a shorthand method of describing a route segment or segments which may have an altitude profile described, an adapted airspeed within the route, re-entry or loop routes as an option or a time delay at a fix within the route as an option. Some of the principal uses of coded routes are as follows:

(i) Standard Instrument Departure (SID)—SIDs, if used, must be filed by the computer code designator as the second element of field 10 and followed by the transition or exit fix.

(ii) Standard Terminal Arrival (STAR)—STARs, if used, must be filed by the computer code designator as the next to last element of field 10 and be immediately preceded by the entry or transition fix.

NOTE.—SIDs and STARs are delineated on charts in separate books published on a 56-day cycle by NOS. SIDs are in 2 volumes, east and west. Order from: Distribution Division C44, National Ocean Survey, Riverdale, Maryland 20840.

(iii) Published Radials—Published radials, e.g, within a preferred route, are considered airways. Do not file unpublished radials.

Examples:

.RBV020.
.JFK053..DPK017.

(iv) Military Routes—Certain military used routes, e.g, Military Training Routes (MTR), Air Refueling Tracks/Anchors, etc., are considered coded routes. The route designator must be preceded and followed by the entry and exit fixes in terms of fix/radial/distance (FRD) and reentry information may be suffixed to certain military coded routes, as follows:

(aa) The entry and exit fix must be associated with a fix on the route and the entry fix must be prior to the exit fix on the route.

Examples:

TNP355025.IR252.
PKE107012

(bb) Routes having reentries for a single Strategic Training Range (STR) site shall contain the entry or alternate entry fix in terms of FRD, the route designator followed immediately by a plus sign (+), either the letter "R" (1st STR site) pr "S" (2nd STR site) and a digit indicating the number of reentries.

Examples:

(FRD) IR240+R2 (FRD)
(FRD) IR240+S3 (FRD)

(cc) Routes having reentries for two STR sites shall contain the entry/alternate entry fix in terms of FRD, the route designator followed immediately by a plus sign (+), the letter "R," and a digit indicating the number of reentries on the first STR site, immediately followed by a second plus sign (+), the letter "S," and a digit indicating the number of reentries on the second STR site.

Examples:

(FRD) IR240+R2+S3 (FRD)

(dd) STR routes must be entered and exited at the respective promary fix. Alternate STR routes must be entered/exited at the alternate entry/exit fix. The routes must be identified by an individual name.

Examples:

(FRD) IR240+R2 (FRD) (Primary)
(FRD) IR240A+R2 (FRD) (Alternate)

(v) North American Routes (NAR) —NAR routes are numerically coded over existing airways and route system from and to specific coastal fixes serving the North Atlantic.

Examples:
.NA50.
.NA9.

(c) *Stereo Route*—A stereo route must specify a prestored stereo tag. An FP message may be entered with a stereo tag as the only field 10 entry, which causes the field 10 data stored for the stereo tag to be substituted for the stereo tag and processed as the filed field 10; additionally, the filed departure point (field 06) must agree with the stored departure point.

(d) *Incomplete Route Indicator* (XXX)—When XXX, the incomplete route indicator, appears in field 10, the element preceding the XXX element must be a fix.

(e) *Visual Flight Rules (VFR) or Defense Visual Flight Rules (DVFR)* element—When VFR or DVFR is the second element of field 10, the filed fix following VFR or DVFR must be internal to the center area to whom the flight plan was initially submitted. When VFR or DVFR is other than the second element in field 10 the element preceding the VFR or DVFR must be a filed fix.

(3) Fix Suffix.

(a) *Estimated Time Enroute (ETE) Suffix*—Consists of an element separator (/) and four digits appended to the destination for General Aviation flights. Leading zeros are required and the time en route is expressed in hours and minutes.

Example:
.STL/0105

(4) A period is not required after the last element of field 10. If remarks (field 11) are present, a space is required after the last element of field 10. If remarks are not present, no space is required and field E (End of Text) should be the next entry.

→ (14) *Remarks (Field 11)*—Consists of the remarks code character—a clear sky symbol (figures shift C on most non-FAA keyboards) or an overcast sky symbol (figures shift B on most non-FAA keyboards)—and the remarks. Remarks are considered mandatory or optional and should be limited to those pertinent to air traffic control. Spaces are permitted within the remarks field to separate words or contractions.

NOTE.—The overcast sky symbol limits the transmittal of the remarks to the center controlling the point of departure. This should be used when it is known that the remarks are only pertinent to the center controlling the departure airport/point.

(a) Mandatory Remarks—These remarks shall be transmitted in field 11 whenever a pilot files the information in his flight plan. A mandatory remark is required whenever there is a modification to the flight plan by the specialist.

(1) If it is necessary to make modifications to the filed route of flight for the purpose of achieving computer acceptance of the input due, for example, to correct fix or airway identification, "FRC" shall be inserted in the remarks field. This indicates to the controller that a full route clearance must be issued. "FRC" shall always be first in the case of intracenter remarks (overcast sky symbol). It must be emphasized that INPUT OPERATORS ARE LIMITED TO MAKING ONLY THOSE CHANGES REQUIRED FOR COMPUTER ACCEPTANCE. Modifications such as those to conform with traffic flows and preferred/recommended routings shall only be made by the pilot (or his operations office) or the controller responsible for initiating the clearance to the aircraft.

(2) When a pilot files an authorized designator in the remarks section of the flight plan, the radio-telephonie must be contained in the remarks field. This radio-telephonie identification will always follow a clear sky symbol.

(b) Optional Remarks—These remarks shall be transmitted when pertinent to air traffic control and can revert to mandatory status for some military flight plans.

(1) In the case of applicable military flights, "NOPAR" shall always be the first item in for intercenter remarks (clear sky symbol).

(2) Remarks for military flight plans filing an IR route must contain the IR route designator, entry time prefaced by the letter X, and MARSA, when applicable. Enter these items first unless (1) above applies, in which case the IR remarks shall be entered first thereafter.

(15) *End of Text Signal/End of Message Function (Field D)*—Consisting of carriage return, carriage return, line feed, line feed, and 4 N's.

d. Additional Messages:

The following messages are eligible for input to center computers via Service B in addition to the Flight Plan (FP) message.

(1) *Remove Strips (RS)*—The purpose of the RS message input is to advise the computer that data on a particular flight is no longer valid and in effect cancels the flight plan and removes it from computer storage.

(a) *Eligibility*—RS messages may be entered only for flight plans which:

(*1*) Are proposed flights.

(*2*) Have been previously entered by the same source entering the RS message.

(*3*) The flight plan is inactive, i.e., a departure strip must not yet have been printed.

Otherwise, the following rejection message is returned:

"REJECT—NOT YOUR CONTROL"

(b) *Format*—Fields 01 (Message type) and 02 (Aircraft Identification) are required.

Example:

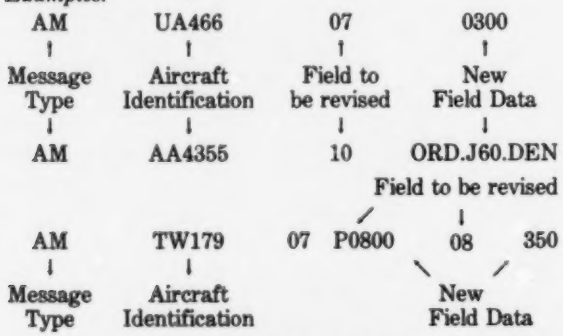
.RS TW138

(2) *Amendment Message (AM)*—The purpose of the AM message is self-explanatory.

(a) *Eligibility*—Same as for the Remove Strip (RS) message (above).

(b) *Format*—Fields 01 (Message type) and 02 (Aircraft Identification) are required. Fields 03 (Aircraft data), 05 (Speed), 06 (Departure Point), 07 (Proposed Departure time), 09 (Requested Altitude), 10 (Route) and 11 (Remarks) are optional.

Examples:



(c) *Restrictions*—If field 02 is to be amended, no other field may be amended in the same message. If field 02 and other fields are to be amended, send a RS message and reenter the entire corrected flight plan. If an attempt is made to amend field 02 within a multiple amendment message, or to amend field 02 to "M," the following rejection message is returned:

"REJECT—INVALID AMENDMENT"

Field 07 Amendments—An attempt to amend field 07 to anything other than a P-time is not allowed. If such an amendment is attempted, the following error message is returned:

"COFIE INVALID TIME PREFIX"

Amendment to Fields 06, 07, and 10—Where fields 06, 07, and 10 are amended with a single AM message, the following rules apply:

(*1*) The amended field 06 replaces the previously stored coordination fix (field 06).

(*2*) The amended field 07, with appropriate letter prefix, replaces the previously stored coordination time (field 07).

(*3*) The amended route data (field 10) may completely replace the previously filed field 10, or may be merged with the filed field 10.

(*4*) If the last element of the amended route data is followed by a destination indicator (↓), this last element becomes the new destination fix.

(*5*) When amended route data is merged with filed data, it replaces all data between the departure point and the first non-amended element remaining in the field. The last element of the amended data must match the first element of the remaining non-amended data, otherwise the following rejection message is returned:

"REJECT—(last element) CANNOT MERGE"

Amendment to Field 10 only—Except as permitted above, a field 10 amendment must be the only field amended; no other field may be amended with the same message. Otherwise, the following is returned:

"REJECT—INVALID AMENDMENT"

(3) *Correction Message (CM)*—When an erroneous input flight plan is identifiably correctable, an error message is generated to the sender when the sender is within the departure center's adapted boundaries.

(a) *Eligibility*—CM messages may be entered only for the period for which the departure center's program is adapted, normally 5 minutes. After that time, the flight plan in error drops out to the center primary A position for reentry. The sender has primary responsibility for corrective action.

NOTE.—Error messages are generated only on messages from sending stations within the adaptation parameters of the departure center and for only that por-

tion of the route within that center's adapted boundaries. Other flight plans in error are referred to a primary **A** position.

(b) *Format*—Responses to error messages shall be transmitted in the form of a CM message within the time parameters adapted for your center.

Example:

ARTCC generated error message:

Sending Facility	MSG type	MSG NR	Field in Error	Data in Error	Reason
DCA	Error	123	08	9A	FORMAT

CM FORMAT:

ARTCC	FIELD 00	MSG TYPE	CORRECT DATA
ZCD	DCA1820123	CM	090

(c) When a CM message in response to an error message results in any change to a pilot filed field 06 departure point or field 10 (Route of flight), once the flight plan has been accepted, an AM message shall be sent to add a field 11 intracenter remark. In remarks, insert "FRC PILOT FILED (original data)".

NOTE.—Also see paragraphs 156B (14) (a)(2).

(d) Should a "not your control" response be received, do not retransmit the flight plan or the AM. Confirm center receipt of the flight plan or AM (FRC/REMARKS) via interphone with the primary **A** position.

COMPUTER FLIGHT DATA INPUT CHART

Field	*Element*	*Example*	*Requirements*
A	Start of Message Code	<<≡	Required for SOM recognition
B	Preamble Line	OKC FF ZCF	Provides originator, priority, and addressee
C	End of Line Function	<<≡	Required to end Preamble line
D	EOT/EOM	NNNN	Terminates message

157-167. RESERVED

221. MESSAGE ACQUISITION

Meteorological information, whether hourly or nonhourly, shall be entered during the times specified in this Handbook. When scheduled data are not available for transmission on time, the contraction DLAD or FINO shall be sent in lieu thereof as appropriate.

222. WMSC CIRCUIT MANAGEMENT

a. The following ATC and NWS locations are designated as data coordinating stations for the indicated circuits:

(1)

001/BOSL	023/SAT	044 JUN	169/ZCI
002/MCB	024/HON	045/AKN	→ 215/HNL
003/ALB	025/RAP	150/ZCP	423/ATL
004/DUJ	026/OMA	151/ZCG	450/DEN
005/HAR	027/SHR	152/ZCK	451/MIA
006/CRW	028/GCK	153/ZCO	452/PHX
007/ROA	029/ABI	154/ZCJ	453/ISP
008/AND	030/ROW	155/ZCR	470/SEA
009/SSI	031/BIL	156/ZCL	471/MKC
010/EYW	032/BOI	157/ZCT	472/ANC
011/DET	033/GUP	158/ZCS	473/FAT
012/CLE	034/LAS	159/ZCM	474/LAX
013/CHI	035/PHX	160/ZCD	475/BNA
014/MKL	036/SFF	161/ZCN	476/RDU
015/MGM	037/PDX	162/ZCU	477/BOS
016/MSP	038/SAC	163/ZCB	478/MEM
017/MKE	039/OAK	164/ZCF	479/DAL
018/ST	040/SAN	165/ZCC	480/CLE
019/JLN	041/GKN	166/ZCA	481/CHI
020/FYV	042/BIG	167/ZCW	482/MSP
021/CLL	043/OTZ	168/ZCH	483/HNL
022/GLS			

(2) NWS Eastern Region

105-109 058 061 066 069 077 079 080 081 086 089 090

(3) NWS Southern Region

110-114 054-057 059 065 067-068 078 084-085 091

(4) NWS Central Region

115-118 053 063-064 070-071 073-075 082 092-098

(5) NWS Western Region

119-122 051 060 062 072 076 083 087-088 099

(6) NWS Alaska Region

047-050

(7) NWS Pacific Region

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Coordinating stations shall notify WMSC of any routine changes desired (not more than five per month) in the scheduled data received on their circuit. Notification shall be made by mail (copies to the Air Traffic Division, ACE-550, and AAT-140) after coordinating a suggested change with all FSSs on the circuit. A majority of stations favoring a change will justify notification to WMSC. Any major data format changes such as presenting data by states shall not be requested more than once a year and such requests shall be forwarded to AAT-140 through the Air Traffic Division. Urgent matters requiring telephone notification shall be processed through the Air Traffic Division who may coordinate through AAT-140.

b. Coordinating stations shall not request data that exceeds the following criteria:

(1) SA—140 U.S. Civil reports including not more than 25 collected on your circuit.

(2) FT—115 U.S. Civil forecasts with no more than 80 scheduled in one hour.

(3) FA—4 U.S. Civil forecasts.

(4) FD—30 U.S. Civil forecasts.

(5) SD—5

(6) UA—50 reporting locations.

(7) Combination SA—20 relayed SW, military, Canadian, Mexican, Alaskan and Hawaiian reports.

(8) Combination Canadian FD and NOTAMs—10.

(9) Combination Mexican FA/UPMX/FT, Canadian FT/FA, and/or Caribbean Bulletin—10.

(10) WH—1.

(11) WST-3.

In addition to above variable data each circuit will receive AC/ASUS, 1/FSUS, all FDC NOTAMs, all distant NOTAMs for each SA received hourly, TWEB amendment notice for material applying to stations on the circuit, GENOTs, CIRNOTs, and WA and WS for FA forecasts selected.

c. NATCOM will issue at least semi-annually in January and July a computer prepared print out listing all data relayed to a specific circuit. A copy will be mailed to the coordinating station.

NOTE.—Paragraph c is applicable to only FSS polled Service A area circuits.

223. HANDBOOK AMENDMENTS

a. Amendments to this part of the Handbook will be made by four media:

(1) General Notices (GENOT).

(2) Circuit Notices (CIRNOT).

(3) Page revisions issued at frequent intervals.

(4) Complete Handbook revisions.

b. *Alaska*—Amendments to Weather Schedules contained in AL-7330.1 will be made by RENOT/MET PANC message.

224. CIRCUIT NOTICE (CIRNOT)

a. Whenever changes in procedures or data base occur, WMSC will issue an ALCKT CIRNOT. Those containing permanent changes will be coordinated with AAT-100 for later GENOT and/or Handbook 7110.80 page change issuance. Whenever the WMSC suffers a catastrophic failure or loss of specific data, an ALCKT CIRNOT will also be issued. The former will be considered cancelled on the receipt of a GENOT or page change, and the latter after restoration of system or specific data.

Examples:

WMSC CIRNOT 4/20
ALCKT
FAMAE (DTG)
DATA BASE CHANGE 7110.80 PARA ETC. OR PROCEDURE CHANGE 7110.80 PARA ETC.
WMSC CIRNOT 4/21
ALCKT
FAMAE (DTG) (TIME OF OUTAGE STARTING OR LOSS OF SPECIFIC DATA)
WMSC DWN UNTIL (DTG) (TIME OF RESTORATION)
NO CURRENT DATA UNTIL (DTG) (ESTIMATED TIME OF DATA REFURBISHMENT)

ALCKT CIRNOTS shall have serial numbers from the first of the year, but all will not necessarily be received on all circuits.

225. USE OF FINO

Whenever a report from an SA location, entered by another location, is not available, the entry station shall enter FINO for the missing report. The WMSC will recognize FINO as a valid report and transmit it to its programmed circuits. Without a report or FINO during distribution of scheduled reports, a circuit could remain idle for up to two minutes while the computer waits for the missing report.

226-235. RESERVED

Section 2. SA OBSERVATION COLLECTION

276. CIRCUIT 001 (GT 08001-1)

AUG Augusta, ME (Augusta Airport)

BHB Bar Harbor, ME (Bar Harbor Airport) (by AUG)

RKD Rockland, ME (Rockland Airport) (by AUG)

HUL Houlton, ME (Houlton Airport)

PQI Presque Isle, ME (by HUL 0500–1900 Lcl)

LEB Lebanon, NH (Lebanon Airport)

VSF Springfield, VT (Springfield State Airport) (by LEB)

BML Berlin (Milan), NH (Berlin Airport) (by LEB)

HIE Whitefield, NH (Whitefield Regional Arpt) (by LEB)

RUT Rutland, VT (Rutland State Airport) (by LEB)

CON Concord, NH (Concord Airport)

MHT Manchester, NH (Grenier Field) (by CON)

EEN Keene, NH (Dillant Hopkins Airport) (Mon-Fri 0700–2000 Lcl, Sat 0700–1400 Lcl, Sun 1100–2000 Lcl) (by CON)

LCI Laconia, NH (Laconia Airport) (by CON)

BOS Boston, MA (Logan Airport)

BED Bedford, MA (Hanscom Field) (0700–2300 Lcl) (by BOS)

ACK Nantucket, MA (Nantucket Memorial Airport) (0600–2300 Lcl) (by BOS)

HYA Hyannis, MA (Barnstable Airport) (0600–2300 Lcl) (by BOS)

EWB New Bedford, MA (New Bedford Airport) (0700–2300 Lcl) (by BOS)

MVY Marthas Vineyard, MA (Marthas Vineyard Airport) (0600–2200 Lcl) (by BOS)

OWD Norwood, Ma (Norwood Memorial Airport) (0700–2300 Lcl) (by BOS)

BVY Beverly, MA (Municipal Airport) (0700–2300 Lcl) (by BOS)

LWM Lawrence, MA (Lawrence Muni Arpt) (0800–2000 Lcl) (by BOS)

BGR Bangor, ME (Bangor International Airport)

277. CIRCUIT 002 (GT 08001-002)

ISP Islip, NY (Long Island—MacArthur Airport)

JFK New York, NY (John F. Kennedy Intn'l Arpt) (by ISP)

FRG Farmingdale, NY (Republic Field) (by ISP)

FOK Westhampton Beach, NY (Suffolk County Airport) (07–23 Lcl) (by ISP)

TEB Teterboro, (Bendix, NJ (Teterboro Airport)

MMU Morristown, NJ (by TEB)

EWR Newark, NJ (Newark Airport) (by TEB)

LGA New York, NY (La Guardia Airport) (by TEB)

HPN White Plains, NY (Westchester County Arpt) (by TEB)

CDW Caldwell, NJ (Essex County Airport (09–17 Lcl) (by TEB)

BDL Windsor Locks, CT (Bradley Field)

BAF Westfield, MA (Barnes Airport) (0700–2300 lcl) (by BDL)

HVN New Haven, CT (New Haven Airport) (1200–0400Z) (by BDL)

GON Groton, CT (Trumbull Field) (by BDL)

HFD Hartford, CT (Hartford/Brainard Airport) (by BDL)

278. CIRCUIT 003 (GT 08001-003)

UCA Utica, NY (Oneida County Airport)

ART Watertown, NY (Watertown Airport)

AVP Avoca, PA (Wilkes-Barre-Scranton Airport)

7TB Tobyhanna, PA (by AVP)

POU Poughkeepsie, NY (Dutchess County Airport)

MSV Monticello, NY (Sullivan County Airport) (by POU)

SWF Newburgh, NY (Stewart Airport) (1100–0300Z) (by POU)

DXR Danbury, CT (Danbury Municipal) (0800–2000 Lcl) (by POU)

ALB Albany, NY (Albany County Airport)

PSF Pittsfield, MA (Pittsfield Airport) (by ALB)
SCH Schenectady, NY (0700–2300 Lcl by ALB)
GBR Great Barrington, MA (08000–1700 Lcl by ALB)
GFL Glens Falls, NY (Warren County Airport)
MPV Montpelier, VT (Barre-Montpelier Airport)
MSS Massena, NY (Richards Airport)
OGS Ogdensburg, NY (by MSS)
SLK Saranac Lake, NY (Adirondack Airport) (0600–2100Lcl) (by MSS)

279. CIRCUIT 004 (GT 08001-004)

BFD Bradford, PA (Bradford Regional Airport)
JHW Jamestown, NY (Jamestown Airport) (Sun-Fri 0900–2000 Lcl—Sat 1000–2000 Lcl) (by BFD)
DUJ DuBois, PA (Jefferson County Airport)
PSB Philipsburg, PA (Philipsburg Airport)
UNV University Park Airport, PA. (By PSB)
AGC Pittsburgh, PA (Allegheny County Airport)
PIT Pittsburgh, (Coraopolis), PA (Greater Pittsburgh Airport) (by AGC)
LBE Latrobe, PA (Latrobe Airport) (by AGC)
ERI Erie, PA (Port Erie Airport)
BUF Buffalo, NY (Buffalo Airport)
ELM Elmira, NY (Chemung County Airport)
ITH Ithaca, NY (Tompkins County Airport) (0600–2200 Lcl) (by ELM)
IPT Williamsport, PA (Williamsport Airport)
AOO Altoona, Martinsburg, PA (Blair County Airport)
JST Johnstown, PA (1100–0300Z) (by AOO)

280. CIRCUIT 005 (GT 08001-005)

DCA Washington, DC (Washington National Airport)
IAD Chantilly, VA (Dulles International Airport) (by DCA)
CXY Harrisburg, PA (Capital City Airport) (by HAR)
MDT Middletown, PA (Harrisburg International Airport/Olmstead Field) (by HAR)
RDG Reading, PA (General Spaatz Airport) (by HAR)
LNS Lancaster, PA (Lancaster Airport) (0700–2300 Lcl) (by HAR)
→**MTN** Baltimore, MD (Glenn L. Martin Airport) (0700–2300 Lcl) (by DCA)
THV Thomasville, PA (Daylight Hours by HAR)
PNE Philadelphia, PA (North Philadelphia Airport)
PHL Philadelphia, PA (Philadelphia International Airport) (by PNE)
TTN Trenton, NJ (Mercer County Airport) (by PNE)
MIV Millville, NJ (Millville Airport)
SBY Salisbury, MD (Salisbury Wicomico County Airport)
WAL Wallops Island, VA (NASA Airport) (0700–1700 Lcl) (by SBY)

281. CIRCUIT 006 (GT 08001-006)

EKN Elkins, WV (Elkins Municipal-Randolph County Airport) (1030–0230Z)
BLF Bluefield, WV (Mercer County Airport)
CRW Charlestown, WV (Kanawaha County Airport)
HTS Huntington, WV (Tri-State Airport)
PKB Parkersburg, WV (Wood County Airport)
HLG Wheeling, WV (Wheeling, Ohio County Airport)
MGW Morgantown, WV (Morgantown Airport)
CKB Clarksburg, WV (Benedum Airport) (by MGW)
MRB Martinsburg, WV (Martinsburg Airport)
HGR Hagerstown, MD (Hagerstown Airport) (by MRB)

282. CIRCUIT 007 (GT 08001-007)

RWI Rocky Mount, NC (Rocky Mount/Wilson Airport) (07–22 Lcl)
EWN New Bern, NC (Simmons-Nott Airport)
OAJ Jacksonville, NC (Albert J. Ellis Airport) (by EWN)
ISO Kinston, NC (Kinston Stallings Field) (by EWN)
ROA Roanoke, VA (Roanoke Municipal Airport)
SSU White Sulphur Springs, WV (Greenbrier Airport) (08–Sunset) (by ROA)
DAN Danville, VA (Danville Airport) (0600–2200 LST)
HSP Hot Springs, VA (Ingalls Field) (0900–1700 Lcl) (by ROA)

LWB Lewisburg, WV (Greenbrier Valley Airport) (1000–2100 Lcl) (by ROA)
CHO Charlottesville, VA (Albemarle Airport)
SHD Staunton, VA (Shenandoah Valley Airport) (0600–2400 LST) (by CHO)
RIC Richmond, VA (Byrd Field)
PHF Newport News, VA (Patrick Henry Airport)
ECG Elizabeth City, NC (Elizabeth City CGAS) (1100–0200Z)

283. CIRCUIT 008 (GT 08002-008)

CHS Charleston, SC (Charleston AFB/Municipal Airport)
AND Anderson, SC (Anderson Airport) (07–22 Lcl)
→ GMU Greenville Downtown Airport, SC (by GSP 0700–2300)
GSP Greer, SC (Greenville-Spartanburg Airport)
HKY Hickory, NC (Hickory Airport)
SPA Spartanburg, SC (Spartanburg Downtown Memorial Airport) 1000–0100Z) (by GSP)
INT Winston-Salem, NC (Smith-Reynolds Airport) (by GSO)
RDU Raleigh, NC (Raleigh-Durham Airport)
FAY Fayetteville, NC (Grannis Airport) (by RDU)
SOP Southern Pines, NC (Pinehurst/Southern Pines Airport) (by RDU)
FLO Florence, SC (Florence Airport)
CRE Crescent Beach, SC (Myrtle Beach Airport) (1300–0100Z)

284. CIRCUIT 009 (GT 08002-009)

AMG Alma, GA (Bacon County Airport) (1100–0300Z)
JAX Jacksonville, FL (Jacksonville Intnl Airport)
CRG Jacksonville, FL (Craig Municipal Airport) (by JAX)
GNV Gainesville, FL (Gainesville Airport)
TLH Tallahassee, FL (Municipal Field)
PFN Panama City, FL (Bay County Airport) (0600–2300 Lcl) (by TLH)
VLD Valdosta, GA (Valdosta Airport) (07–22 Lcl)
ABY Albany, GA (Albany Airport)
7A9 Plains, GA (Peterson Airport) (by ABY)
MGR Moultrie, GA (Moultrie-Thomasville Airport) (0530–1945 Lcl) (by ABY)
MCN Macon, GA (Macon-Cochran Airport)
SAV Savannah, GA (Travis Chatham Airport)
SSI Brunswick (St. Simons Island), GA (McKinnon Airport)
BQK Glynco Jetport, Brunswick, GA (Unsched 05/2200 Lcl by SSI)

285. CIRCUIT 010 (GT 08002-010)

VRB Vero Beach, FL (Vero Beach Airport)
MIA Miami, FL (Miami International Airport)
FLL Fort Lauderdale, FL (Ft. Lauderdale-Hollywood, Intnl. Airport) (by MIA)
TNT Miami, FL (Dade-Collier Training and Transition Airport) (Mon-Fri 07–19 Lcl Sat-Sun 07–13 Lcl) (by MIA)
EYW Key West, FL (International Airport)
FMY Fort Myers, FL (Page Field)
PIE St. Petersburg, FL (Pinellas County Intnl. Airport)
SRQ Sarasota, FL (Sarasota-Bradenton Airport) (0600–2400) (by PIE)
BOW Bartow, FL (Bartow Municipal Airport) (0900–1700 Lcl Mon-Fri plus night as reqd) (by PIE)
LAL Lakeland, FL (08–1800 Lcl) (by PIE)
MLB Melbourne, FL (Cape Kennedy Regional Airport)
TIX Titusville, FL (Ti-Co Airport) (0800–2100 Lcl) (by MLB)
ORL Orlando, FL (Orlando Municipal Airport)
MCO Orlando, FL (McCoy AFB) (by ORL)
SFB Sanford, FL (by ORL)
P73 Dry Tortugas, FL (by EYW)

286. CIRCUIT 011 (GT 08003-011)

LAN Lansing, MI (Capital City Airport)
JXN Jackson, MI (Reynold Field)
MBS Saginaw, MI (Tri-City Airport)
DET Detroit, MI (Detroit City Airport)
DTW Detroit, MI (Detroit Metropolitan Wayne County Arpt) (by DET)
YIP Detroit, MI (Willow Run Airport) (by DET)
PTK Pontiac, MI (Pontiac Airport) (0600–2400 Lcl) (by DET)
ARB Ann Arbor, MI (Municipal Airport) (0800–2000 Lcl) (by DET)

287. CIRCUIT 012 (GT 08001-012)

CMH Columbus, OH (Port Columbus Airport)
MFD Mansfield, OH (Mansfield Airport) (by CMH)
OSU Columbus, OH (Ohio State University Airport) (by CMH)
LUK Cincinnati, OH (Cincinnati Municipal/ Lunken Field)
CVG Cincinnati, OH (Greater Cincinnati Airport) (by LUK)
DAY Dayton, OH (Dayton Airport)
FDY Findlay, OH (Findlay Airport)
CLE Cleveland, OH (Cleveland-Hopkins Intnl. Airport)
BKL Cleveland, OH (Burke-Lake Front Airport) (by CLE)
CGF Cleveland, OH (Cuyahoga County Airport) (0700-2300) (by CLE)
YNG Youngstown, OH (Youngstown Airport)
FKL Franklin, PA (Chess/Lamberton Airport) (by YNG)
ZZV Zanesville, OH (Zanesville Airport)

288. CIRCUIT 013 (GT 08003-013)

LAF Lafayette, IN (Purdue University Airport)
IND Indianapolis, IN (Indianapolis-Weir Cook Airport)
MIE Muncie, IN (Delaware Co. Airport/Johnson Field) (0700-2300 lcl) (by IND)
BMG Bloomington, IN (Kister's Airport) (by IND)
HUF Terre Haute, IN (Hulman Airport)
DPA West Chicago, IL (Dupage County Airport) (by CHI)
CGX Chicago, IL (Meigs Field) (by CHI)
MDW Chicago, IL (Chicago Midway Airport) (CHI)
ORD Chicago, IL (Chicago O'Hare International Airport) (by CHI)
ARR Aurora, Il. Muni Arpt (by CHI 0700-2100 Lcl)
RFD Rockford, IL (Greater Rockford Airport)
SBN South Bend, IN (Michiana Regional Airport)
AZO Kalamazoo, MI (Kalamazoo Airport) (by SBN)
BTL Battle Creek, MI (Kellog Airport) (by SBN)
EKM Elkhart, IN (0600 0000 lcl) (by SBN)
BEH Benton Harbor, MI (Ross Field by SBN)
FWA Ft. Wayne, IN (Baer Field)

289. CIRCUIT 014 (GT 08002-014)

TRI Bristol, TN (Tri City Airport) (06-22 Lcl)
LNP Lonesome Pine, VA (Daily 07-07 Lcl two hour intervals) (by TRI)
CSV Crossville, TN (Crossville Airport)
BNA Nashville, TN (Nashville Metropolitan Airport)
CKV Clarksville, TN (Outlaw Field) (Mon-Fri, 0600-2100 Lcl) (Sat 0600-2100 Lcl) (Sun 0900-2100 Lcl) (by BNA)
MKL Jackson, TN (McKellar Airport)
PAH Paducah, KY (Barkley Airport)
BWG Bowling Green, KY (Bowling Green-Warren County Airport)
OWB Owensboro, KY (Owensboro-Davie County Airport) (1200-0300Z) (by BWG)
SDF Louisville, KY (Standiford Field) (by LOU)
LOU Louisville, KY (Bowman Field) (by LOU)
513 Pikeville, KY (by LOU)
LOZ London, KY (Corbin-London War Memorial Airport)
TYS Knoxville, TN (McGhee-Tyson Airport)
DKX Knoxville, KY (Knoxville Downtown Island Airport) (07-22 Lcl) (by TYS)

290. CIRCUIT 015 (GT 08002-015)

MGM Montgomery, AL (Dannelly Field)
AUO Auburn, AL (Auburn-Opelika Airport) (0800-1300 Lcl) (by MGM)
CEW Crestview, FL (Crestview Airport)
PNS Pensacola, FL (Pensacola Airport)
TCL Tuscaloosa, AL (Van De Graaff Airport) (07-22 Lcl)
BHM Birmingham, AL (Birmingham Airport)
MSL (Muscle Shoals, AL (Muscle Shoals Airport)
TUP Tupelo, MS (Tupelo Airport) (by MSL)
ANB Anniston, AL (Anniston/Calhoun County Airport)
GAD Gadsen, AL (Gadsen Airport) (by ANB)
RMG Rome, GA (Russell Field) (Amos)
FTY Atlanta, GA (Fulton County Airport) (by ATL)
ATL Atlanta, GA (Atlanta Airport)
DHN Dothan, AL (Dothan Airport)

LVK Livermore, CA (Livermore Municipal Airport) (08–20 Lcl) (by SCK)
MOD Modesto, CA (Modesto Airport) (by SCK)
FAT Fresno, CA (Fresno Air Terminal)
VIS Visalia, CA (Visalia Airport) (0700–1700 Lcl) (by FAT)
FCH Chandler Downtown Airport Fresno, CA (07/2200 Lcl by FAT)
WJF Lancaster, CA (William J. Fox Airport)
PMD Palmdale, CA (Air Force Plant 42) (0600–2200 Lcl) (by WJF)
BFL Bakersfield, CA (Meadows Field)

315. CIRCUIT 040 (GT 08006-040)

SAN San Diego, CA (San Diego Intn'l-Lindberg Airport)
SEE San Diego, CA (Gillespie Field) (by SAN)
MYF San Diego, CA (Montgomery Field) (by SAN)
CRQ Carlsbad, CA (Palomar Airport) (0700–2300 Lcl) (by SAN)
TRM Thermal, CA (Thermal Airport)
PSP Palm Springs, CA (Palm Springs Airport) (1400–0600Z) (by TRM)
IPL Imperial, CA (Imperial County Airport)
ONT Ontario, CA (Ontario Intn'l Airport)
SBA Santa Barbara, CA (Santa Barbara Airport)
OXR Oxnard, CA (Ventura County Airport) 0600–2200 Lcl) (by SBA)

316. CIRCUIT 041 (LCGA 7131) (ALL STATIONS ALASKA)

ANC Anchorage (International Airport)
ENA Kenai
HOM Homer
5BI Big River Lakes (by HOM)*
ADQ Kodiak
ORT Northway
Z12 Tok (by ORT)*
TKA Talkeetna
PTI Puntilla (by TKA)*
5HR Hayes River (by TKA)*
PAQ Palmer
UMM Summit (AUTOB)
VDZ Valdez (Municipal Airport)
VWS Valdez (City)
5CE Cape Saint Elias (Amos)
5HN Cape Hinchinbrook (Amos)
GKN Gulkana
5PX Paxson (by GKN)*
5SZ Slana (by GKN)*
5SO Snowshoe (by GKN)*
5GN Tahneta Pass (by GKN)*

* Intermediate Contractor Observation

317. CIRCUIT 042 (LGCA 7132) (ALL STATIONS ALASKA)

Z76 Port Alexander, AK
FAI Fairbanks (International Airport)
LNI Lonely Dew Station (by FAI)
5EA Healy (by FAI)*
CRC Circle City (by FAI)
MLY Manley Hot Springs (by FAI)*
FYU Ft. Yukon (AUTOB)
BIG Big Delta (Part Time Manned) (AMOS)
TAL Tanana
BTT Bettles
WCR Chandalar Lake (Chandalar Lk. Arpt.) (by BTT)*
BRW Barrow
PBA Pt. Barrow
AIN Wainwright DEW Station (by FAI) UNSKED
PIZ Pt Lay DEW Station (by FAI) UNSKED
OLI Oliktok DEW Station (by FAI) UNSKED
SCC Deadhorse
UMT Umiat (by SCC)*
PUO Prudhoe Bay (by SCC)*
BTI Barter Island
ENN Nenana

* Intermediate Contractor Observation

318. CIRCUIT 043 (LGCA 7133) (ALL STATIONS ALASKA)

BET Bethel
KSM St. Marys (by BET)*
2Z0 Emmonak (by BET)*
ANI Aniak (0650–1950 OTRW AMOS)
SNP St. Paul Island
MCG McGrath
MHM Minchumina (by MCG)*
RBY Ruby (by MCG)*
FWL Farewell (0800–1600 Mon–Fri)
UNK Unalakleet (0800–1600 Mon–Fri OTRW AUTOB)
OME Nome
GAM Gambell (by OME)*
KPC Port Clarence (by OME)*
OTZ Kotzebue

* Intermediate Contractor Observation

319. CIRCUIT 044 (LGCA 7134) (ALL STATIONS ALASKA)

CDV Cordova
JOH Johnstone Point (by CDV)*
MXY McCarthy (by CDV)*
→ CYT Yakataga (by CDV)*
MDO Middleton Island (AMOS)
YAK Yakutat
JNU Juneau
FIV Five Finger (by JNU)*
FNR Funter Bay (by JNU)*
SSR Sisters Island (by JNU)*
Z49 Hoonah (by JNU)*
GST Gustavus (by JNU)*
Z26 Haines (by JNU)*
SGY Skagway (by JNU)*
Z49 Hoonah, AK (by JNU)
SIT Sitka
Z76 Port Alexander (by SIT)*
WRG Wrangell (by SIT)
AGN Angoon (by SIT)*
PSG Petersburg (by SIT)*
ELV Elfin Cove (by SIT)*
KAE Kake (by SIT)*
KTN Ketchikan
9ZO Klawock, AK (by KTN)
ANN Annette Island

* Intermediate Contractor Observation

320. CIRCUIT 045 (LGCA 7135)

AKN King Salmon
Z30 Port Alsworth (by AKN)*
DLG Dillingham
ILI Iliamna (0545–2145 OTRW AMOS)
CDB Cold Bay
CSH Cape Sarichef (by CDB)*
DUT Dutch Harbor (by CDB)*
SDP Sand Point (by CDB)*
SKJ Sitkinak (by CDB)*
PTH Port Heiden (OTRW AMOS)*

* Intermediate Contractor Observation

321. CIRCUIT 105 (GT 08001-045)

BGM Binghamton, NY (Broome County Airport)
BID Block Island, RI (AMOS)
BTV Burlington, VT (Burlington Airport)
CAR Caribou, ME (Caribou Airport) (1000–0400Z)
PWM Portland, ME (Portland City Airport)
MWN Mt. Washington, NH (by PWM)
3B1 Greenville, ME (by PWM)
9B2 St. Johnsbury, VT (AMOS)
PVD Providence, RI (Theodore Francis Green) State Arpt)
ORH Worcester, MA (Worcester Airport) (AMOS)
BDR Bridgeport, CT (Bridgeport Airport)

322. CIRCUIT 106 (GT 08001-046)

ABE Allentown, PA (Allentown-Bethlehem-Easton Airport)
ACY Atlantic City, NJ (NAFEC Atlantic City Airport/Pomona)

323. CIRCUIT 107 (GT 08002-047)

AVL Asheville, NC (New Asheville Airport)
HSS Hot Springs, NC (by AVL)
CAE Columbia, SC (Columbia Metropolitan Airport)
CLT Charlotte, NC (Douglas Airport)
HAT Hatteras, NC
ILM Wilmington, NC (New Hanover County Airport)
GSO Greensboro, NC (Greensboro-High Point Airport)

324. CIRCUIT 108 (GT 08001-048)

BWI Baltimore, MD (Baltimore-Washington International Airport)
ILG Wilmington, DE (New Castle County Airport)
BKW Beckley, WV (Raleigh County Airport)
LYH Lynchburg, VA (Preston Glenn Airport) (1100–0000 Lcl)
ORF Norfolk, VA (Norfolk Airport)

325. CIRCUIT 109 (GT 08001-049)

CAK Akron, OH (Akron-Canton County Airport)
TOL Toledo, OH (Express Airport)
ROC Rochester, NY (Monroe County Airport)
SYR Syracuse, NY (Clarence E. Hancock Airport)

326. CIRCUIT 110 (GT 08004-050)

CAO Clayton, NM (Clayton Airport) (AMOS)
SJT San Angelo, TX (San Angelo Airport-Mathis Field)

327. CIRCUIT 111 (GT 08004-051)

ACT Waco, TX (Waco Municipal Airport)
FSM Fort Smith, AR (Fort Smith Airport)
PGO Rich Mountain, OK (AMOS)

328. CIRCUIT 112 (GT 08004-052)

DRT Del Rio, TX (Del Rio International Airport)
BRO Brownsville, TX (Brownsville International Airport)
CRP Corpus Christi, TX (Corpus Christi Intn'l Airport)
VCT Victoria, TX (Foster Field)
BPT Beaumont, TX (Jefferson County Airport)
MSY New Orleans, LA (Moisant Intl Arpt)
BTR Baton Rouge, LA (Ryan Field)
BVE Boothville, LA

329. CIRCUIT 113 (GT 08002-053)

HSV Huntsville, AL (Huntsville-Madison County Airport)
AQQ Apalachicola, FL
TRI Bristol, TN (Tri-City Airport)
CHA Chattanooga, TN (Lovell Field)

330. CIRCUIT 114 (GT 08002-054)

AGS Augusta, GA (Bush Field)
AHN Athens, GA (Athens Airport)
CSG Columbus, GA (Muscogee County Airport)
DAB Daytona Beach, FL
PBI West Palm Beach, FL (Palm Beach Intn'l. Airport)
CTY Cross City, FL (Cross City Airport) (AMOS)

331. CIRCUIT 115 (GT 08003-055)

APN Alpena, MI
FNT Flint, MI (Bishop Airport)
GRR Grand Rapids, MI (Kent County Airport)
HTL Houghton Lake, MI (Roscommon County Airport)
MKG Muskegon, MI (Muskegon County)
MMO Marseilles, IL (AMOS)
MSN Madison, WI (Truax Airport)
SSM Sault Ste. Marie, MI (Sault Ste. Marie Airport)
P75 Seul Choix Point, MI (AMOS)

332. CIRCUIT 116 (GT 08003-056)

BIS Bismarck, ND (Bismarck Airport)
DLH Duluth, MN (Duluth Airport)
FAR Fargo, ND (Fargo Airport)
FSD Sioux Falls, SD (Foss Airport)
INL International Falls, MN (International Falls Airport)
ISN Williston, ND (Sloulin Field)
STC St. Cloud, MN (St. Cloud Muni Airport) (1200-0000Z +0300Z)
P11 Devil's Lake, ND (AMOS) (3 Mi East of Airport)
P24 Roseglen, ND (AMOS)
D45 Warroad, MN (AMOS)
P39 Pequot Lakes, MN (AMOS)

333. CIRCUIT 117 (GT 08005-057)

ALS Alamosa, CO (Alamosa Airport) (1100/0300)
COS Colorado Springs, CO (Peterson Field)
CNK Concordia, KS (Blosser Airport)
CYS Cheyenne, WY (Cheyenne Airport)
LND Lander, WY (Hunt Field)
OFK Norfolk, NE (Stefan Memorial Airport)
VTN Valentine, NE (1200-0100 plus 0300 0600 0900Z)
PUB Pueblo, CO (Pueblo Memorial Airport)

TOP Topeka, KS (Phillip Billard Airport)
1K5 Elkhart, KS (Elkhart Municipal Airport) (AMOS)
BPI Big Piney, WY (AMOS)
COD Cody, WY (AMOS)
GCC Gillette, WY (AMOS)
CAG Craig, CO (Craig Moffat Airport) (AMOS)
P28 Medicine Lodge, KS (AMOS)

334. CIRCUIT 118 (GT 08003-058)

ALO Waterloo, IA (Ottumwa Industrial Airport)
DBQ Dubuque, IA (Dubuque Airport) (1000-0500Z)
EVV Evansville, IN (Dress Memorial Airport)
FOD Fort Dodge, IA (Fort Dodge Airport) (AMOS)
LEX Lexington, KY (Blue Grass Airport)
MLI Moline, IL (Quad-City Airport)
PIA Peoria, IL (Peoria Airport)
SPI Springfield, IL (Capitol Airport)
SUX Sioux City, IA (Sioux City Airport)
P02 Poplar Bluff, MO (AMOS)
P35 Spikard, MO (AMOS)

335. CIRCUIT 119 (GT 08006-059)

UIL Quillayute, WA (Quillayute State Emergency Airport)
AST Astoria, OR (Clatsop County Airport)
OLM Olympia, WA (Olympia Airport)
SHN Shelton, WA (Sanderson Field) (by OLM)
SLE Salem, OR (McNary Field)
EUG Eugene, OR (Mahlon-Sweet Airport)
SXT Sexton Summit, OR (Amos)
MFR Medford, OR (Medford Airport)
SMP Stampede Pass, WA (AMOS)
YKM Yakima, WA (Yakima Airport)
GEG Spokane, WA (Spokane International Airport)
63S Colville, WA (0000 plus each 6 hr) (by GEG)
PDT Pendleton, OR (Pendleton Airport)
MEH Mecham, OR (Amos)

336. CIRCUIT 120 (GT 08006-060)

BLU Blue Canyon, CA (Blue Canyon Airport) (Amos)
MHS Mount Shasta, CA (Amos)
SMX Santa Maria, CA (Santa Maria Public Airport) (1300-0500 May-Sept; 1400-0600 Oct-Apr)
WMC Winnemucca, NV (Winnemucca Municipal Airport)
87Q Pt. Piedras Blancas, CA (San Simeon) (AMOS)
P38 Caliente, NV (AMOS)

337. CIRCUIT 121 (GT 08006-061)

BIH Bishop, CA (Bishop Airport) (1300-0300Z UFN)
SDB Sandberg, CA (AUTOB)
FLG Flagstaff, AZ
INW Winslow, AZ (Winslow Airport) (AUTOB)
PGA Page, AZ (AMOS)
IGM Kingman, AZ (Kingman Airport) (Amos)
E74 Safford, AZ (RAMOS)

338. CIRCUIT 122 (GT 08006-062)

MLF Milford, UT (Milford Airport) (May-Oct 1200-2200; Nov-Apr 1300-2300)
ENV Wendover, UT (Wendover AFB) (AUTOB)
LWS Lewiston, ID (Lewiston Airport) 1200-0300Z)
PIH Pocatello, ID (Pocatello Airport)
MQM Monida, MT (1300-1600Z plus 00, 02, 18, 20, 22, 23) (by PIH)
4SV Strevell, ID (00, 12, 14, 16, 18, 21Z) (by PIH)
WEY West Yellowstone MT (00 PE H) (by PIH)
GGW Glasgow, MT (Glasgow Airport)
HVR Havre, MT (Havre City Airport) (12-03Z)
HLN Helena, MT (Helena Airport)
FCA Kalispell, MT (Flathead County Airport)

→ **339. CIRCUIT 215 (1404)**

LIH Lihue, Kauai (Lihue Airport)
BKH Barking Sands, Kauai (Pacific Missile Range) (17–02Z)
OGG Kahului, Maui (Kahului Airport)
HKP Kaanapali, Maui (Kaanapali Airstrip) (by OGG)
HNL Honolulu, Oahu (by WSO)
MKK Molokai (Molokai Airport) (AMOS)
LNY Lanai (Lanai Airport) (by HNL 16–04 GMT)
ITO Hilo, Hawaii (General Lyman Field)
KOA Kailua-Kona, Hawaii (Ke-Ahole Airport) (by ITO)
MUE Kamuela, Hawaii (Waimea-Kahala Airfield) (by ITO)
HFO Honolulu, Hawaii (WSFO)

340. SA OBSERVATIONS ENTERED BY FSS/WSFO VIA DEDICATED FDX NON-POLLED CIRCUITS

3HT Harlowton, MT (15–18, 21–01Z) (by GTF WSFO)
4BQ Broadus, MT (00, 06, 12, 18Z) (by GTF WSFO)
3DU Drummond, MT 12–00Z Apr-Oct, 13–01Z Nov-Mar) (by GTF WSFO)
PDX Portland, OR (Portland International Airport) (by PDX WSFO)
CZK Cascade, OR (Cascade Locks/Stevenson State Airport) 15–01Z at 2 hr intervals) (by PDX WSFO)
4BK Brookings, OR (12–06Z at 3 hr intervals) (by PDX WSFO)
ONP Newport, OR (00–21Z at 3 hr intervals) (by PDX WSFO)
4LW Lakeview, OR (12–06Z at 3 hr intervals) (by PDX WSFO)
MWS Mt. Wilson, CA (00, 06, 12, 18Z) (by LAX WSFO)
EED Needles, CA (00 03 06 09 12 13 14 15Z) (by LAX WSFO)
P70 Clines Corner, NM (RAMOS) (by WBC)
P73 Dry Tortugas, FL (RAMOS) (by WBC)
S11 Alturas, CA (12–0600Z by SFO)
PRT Point Retreat, AK (RAMOS) (by WBC)
ERO Eldred Rock, AK (RAMOS) (by WBC)
4DG Douglas, WY (by CYS)
3OI Lamoni, IA (by DSM WSFO)
3SE Spencer, IA (by DSM WSFO)
MLD Malad City, ID (12–00Z 03 06 09Z) (by BOI WSFO)
GNG Gooding, ID (Gooding Airport) (15–01Z 03Z) (by BOI WSFO)
S80 Grangeville, ID (00 06 12 18Z) (by BOI WSFO)
PHP Philip, SD (Philip Airport) (03 06 09 1200–0000 Lcl) (by FSD WSFO)
CZZ Campo, CA (by SAN)
SDM San Diego, CA (Brown Field Municipal Airport) (07–23 Lcl) (by SAN)
LAX Los Angeles, CA (Los Angeles International Airport)
SMO Santa Monica, CA (Santa Monica Airport) (by LAX)
BUR Burbank, CA (Hollywood-Burbank Airport) (by LAX)
LGB Long Beach, CA (Long Beach Airport/ Daugherty Field) (by LAX)
BUO Beaumont, CA (1400–0200Z at two HRLY intervals plus HRLY as required by WX CNDS) (by LAX WSFO)
TOA Torrance, CA (Torrance Airport) (by LAX)
HHR Hawthorne, CA (Hawthorne Airport) (by LAX)
SNA Santa Ana, CA (Orange County Airport) (by LAX)
VNY Van Nuys, CA (Van Nuys Airport) (by LAX)
AVX Santa Catalina Island, CA (Catalina Airport) (by LAX)
FUL Fullerton, CA (Fullerton Airport) (by LAX)
EMT El Monte, CA (El Monte Airport) (1400–0500Z) (by ONT)
RAL Riverside, CA (Riverside Municipal Airport) (1400–0500Z) (by ONT)
POC Laverne, CA (Brackett Field) (07–23 Lcl) (by ONT)

CNO Chino, CA (Chino Airport) (07–22 Lcl) (by ONT)
AK42 Sutton, AK (0645–1645 Lcl) (by MRI)
5WO Lazy Mountain, AK (0450–0650) (by MRI)
LIC Limon, CO (by DEN SWFO)
LXV Leadville, CO (by DEN WSFO)
FCL Fort Collins, CO (by DEN WSFO)
2V9 Gunnison, CO (3E GUN) (01 03 05 17 19 21 23 Lcl) (by DEN WSFO)
6V8 Montrose, CO (½ NE MTJ) (01 03 05 21 23 Lcl) (by DEN WSFO)
4LJ Lamar, CO (by DEN WSFO)
4V5 Durango, CO (N DRO) (01 03 05 21 Lcl) (by DEN WSFO)
CV2 Salida, CO (Harriet Alexandria Field) (by DEN WSFO)
SDY Sidney, MT (Sidney-Richland Municipal Airport) (by DEN)
SKW Skwentna, AK (0750–1550 and 1950) (by MRI)
SVC Silver City, NM (Grants County Airport) (by DEN)
GUC Gunnison, CO (Gunnison County Airport) (06–16 MST) (by DEN)
HDN Hayden, CO (by DEN)
MTJ Montrose, CO (06–22 Lcl) (by DEN)
CEZ Cortez, CO (Cortez Montezuma County Airport) (by DEN)
DRO Durango, CO (Durango-La Plata County Airport) 06–20 MST) (by DEN)
GDV Glendive, MO (Glendive Airport) (by DEN)
OLF Wolf Point, MT (Wolf Point Airport) (by DEN)
3V9 Aspen, CO (Woody Creek) (by DEN)
VEL Vernal, UT (Vernal Airport) (by DEN)
5WD Seward, AK (SVC C)
5WT Whitter, AK (SVC C)
Z22 Willow, AK (0645–1645) (by MRI)
Z00 Chulitna River Lodge, AK (0545 EA ODD HR thru 2345) (by MRI)
BOI Boise, ID (Boise Air Terminal by BOI WSFO)
ALW Walla Walla, WA (Walla Walla Airport)

341. SA OBSERVATIONS ENTERED BY AIRLINE VIA DEDICATED FDX NON-POLLED MEDIUM SPEED CIRCUIT (GD 09488-803)

BJI Bemidji, MN (Bemidji Airport)
BKX Brookings, SD (Brookings Airport)
BRD Brainerd, MN (Crow Wing County Airport)
CIU Sault Ste Marie, MI (Chippewa County International Airport)
CWA Mosinee, WI (Central Wisconsin Airport)
DVL Devils Lake, ND (Municipal Airport)
ESC Escanaba, MI (Escanaba Airport)
FRM Fairmount, MN (Fairmount Airport)
GTR Columbus, MS (Golden Triangle Regional Airport)
IMT Iron Mountain, MI (Ford Airport)
IWD Ironwood, MI (Gogebic County Airport)
JVL Janesville, WI (Rock County Airport)
MBL Manistee, MI (Manistee-Blacker Airport)
MHE Mitchell, SD (Mitchell Airport)
MKT Mankato, MN (Mankato Airport)
MNM Menominee, MI (Menominee County Airport)
MTW Manitowic, WI (Manitowic Airport)
OTG Worthington, WN (Worthington Airport)
RHI Rhinelander, WI (Rhinelander-Oneida Co Airport)
TVF Thief River Falls, MN (Thief River Falls Airport)
YKN Yankton, SD (Chan Gurney Airport)
UOX Oxford, MS (University Oxford Airport) (14–17Z, 22–23Z, 00–01Z) (by MEM)

342. RAMOS OBSERVATIONS BY DAYTON ADAS

P07 Sanderson, TX
PUC Price, UT
5I3 Pikeville, KY
P59 Copper Harbor, MI
P68 Eureka, NV
P58 Harbor Beach, MI
JDN Jordan, MT
P67 Lidgerwood, ND
P61 Grand Marais
P60 Yellowstone, WY
P69 Elk City, ID

343. RAMOS OBSERVATIONS VIA SATELLITE TO SUITLAND, MD. (SXUS3 KWBC)

AKP Anaktuvuk
ERO Eldred Rock
IKO Nikolski
PRT Point Retreat
SMA St. Marys
SHG Shungnak
CDE Cape Decision
CSP Cape Spencer
P88 Rome, OR
P65 Lukeville, AZ

344–355. RESERVED

Section 13. FLIGHT ADVISORIES (SIGMET WS—AIRMET WA, WAC)

→ 446. GENERAL

Flight Advisories are issued by Weather Service Forecast Offices (WSFO) to provide notice of potentially hazardous weather conditions by amending or supplementing portions of the valid area forecast (FA). They are transmitted to the WMSC over the dedicated WSFO circuits. The report type designator WS for SIGMETs, WST for convective SIGMETs, and WA for AIRMETs is used to effect selective distribution. The text of the message identifies which advisory is being transmitted. The latest message for each system is kept in the computer's active storage file by the WMSC. WA for 360 minutes, WS for 360 minutes, WST for 45 minutes.

447. PREPARATION FOR TRANSMISSION

The following examples illustrate the manner in which a Flight Advisory is prepared for transmission on the dedicated WSFO circuit.

Example 1:

ZCZC<≡
SLC>WS>262005<≡
262005-270000<≡
SIGMET ALPHA 1 (advisory, SIGMET) (first one issued for Alpha system)
<8≡
NNNN 8∨

Example 2:

ZCZC<≡
MKC>WS>191512<≡
191512-191800<≡
SIGMET BRAVO 2 (advisory, SIGMET) (second one issued for Bravo system)
<8≡
NNNN 8∨

Example 3:

ZCZC<≡
MSY>WA>132215<≡
132215-140000<≡
AIRMET ALPHA 1 (advisory, AIRMET) (first one issued for Alpha system)
<8≡
NNNN 8∨

NOTE.—Convective SIGMETs are transmitted only by NSSFC to WMSC.

448. DISTRIBUTION

SIGMET (WS) and AIRMET (WA) messages are distributed unscheduled to all Service A circuits. Convective SIGMET (WST) is distributed priority scheduled at H+55 each hour by WMSC to all circuits.

449-455. RESERVED

Section 14. TRANSCRIBED WEATHER BROADCAST (TWEB)

456. GENERAL

The Transcribed Weather Broadcast (TWEB) and synopsis for selected routes are prepared by National Weather Service Forecast Offices and forwarded to the WMSC for distribution.

TWEB Schedule

Time Zone	*Local*	*GMT*	*Validity*
Eastern	0715	1115	11Z–23Z
Central	0615	1115	11Z–23Z
Mountain	0540	1140	12Z–00Z
Pacific	0440	1140	12Z–00Z
Eastern	1340	1740	18Z–06Z
Central	1240	1740	18Z–06Z
Mountain	1240	1840	19Z–07Z
Pacific	1140	1840	19Z–07Z
Eastern	1915	2315	23Z–17Z
Central	1815	2315	23Z–17Z
Mountain	1815	0015	00Z–18Z
Pacific	1715	0015	00Z–18Z

a. The morning and mid-day TWEB and synopsis will be valid for 12 hours. The evening TWEB and synopsis will be valid 18 hours with no outlook.

b. Eastern and Central TWEBs shall not be entered prior to H+20 for hours 10, 17 and 22 GMT. Mountain and Pacific TWEBs shall not be entered prior to H+20 for hours 11, 18 and 23 GMT.

457. PREPARATION FOR TRANSMISSION

Prepare TWEB reports for entry into the WMSC in accordance with the following examples:

a. A Forecast Office Entry station, Boston (BOS), entering on the Forecast Office circuit the TWEB synopsis and routes for which it has responsibility in the Z multiple report format.

Example:

ZCZC<≡
BOS>SYNS>(Report text)≡≡≡≡<<𝕍
BOS>Z>TWEB>≡<<𝕍
006>(Route text)≡≡<<𝕍
007>(Route text)≡≡<<𝕍
008>(Route text)≡≡<<𝕍
009>(Route text)≡≡<<𝕍
010>(Route text)<≡≡
NNNN8𝕍

NOTE.—This example uses the Z format for route preparation which reduces transmission time. The Z and the report type in the heading serve to notify the WMSC computer that all following reports are of the same type. This format may be used only when a group is the only or last one transmitted. The synopsis in this example is the first group transmitted.

b. A Forecast Office entry station Boston (BOS) entering on the Forecast Office circuit the TWEB synopsis and routes for which it has responsibility in individual format.

Example:

ZCZ<≡
BOS>SYNS>(Report text)<≡≡≡≡
NNNN8𝕍

Example:

ZCZC<≡
006>TWEB>(Report text)<≡≡
NNNN8𝕍

Example:

ZCZC<≡
BOS>SYNS>(Report text)≡≡≡≡<<𝕍
006>TWEB>(Report text)≡≡<<𝕍
007>TWEB>(Report text)≡≡<<𝕍
008>TWEB>(Report text)≡≡<<𝕍
009>TWEB>(Report text)≡≡<<𝕍
010>TWEB>(Report text)<≡≡
NNNN8𝕍

NOTE.—These examples do not use the Z heading and the report type is included in each message.

c. TWEB reports are not routinely distributed on Service A circuits. Revisions or amendments will be brought to the users attention via an Alert Notice. Alert Notices are prepared by forecasters responsible for the preparation of the original TWEB routes and synopsis, and will be entered on Forecast Office circuits and relayed by WMSC to appropriate Service A circuits. The amended TWEB route or synopsis will also be prepared and sent to WMSC via Forecast Office circuits at the same time as the Alert Notice. The amended data will be available for request/reply as soon as the Alert Notice appears on the Service A area circuits.

Example 1:

ZCZC<≡
BOS>TWAMD<≡
BOS TWEB AMD 161808 RTE 006 AVBL<≡≡≡≡
NNNN8𝕍

Section 2. REPORT IDENTIFIER INDEX OF NON-WMO REPORT TYPE DESIGNATORS (USE RQ PROCEDURES)

480. ALASKAN BLOCK AND STATION NUMBER CROSS REFERENCE

REPORTING LOCATIONS:

AKN-70326	BRW-70026	JNU-70381	SNP-70308
ANC-70273	BTI-70086	MCG-70231	YAK-70361
ANN-70398	CDB-70316	OME-70200	
BET-70219	FAI-70261	OTZ-70133	

481. CONTERMINOUS U.S. BLOCK AND STATION NUMBER CROSS REFERENCE

REPORTING LOCATIONS:

ABE-72517	DAY-72429	ISN-72767	PWM-72606
ABI-72266	DBQ-72547	JAN-72235	RAP-72662
ABQ-72365	DCA-72405	JAX-72206	RBL-72591
ABR-72659	DDC-72451	JFK-74486	RDU-72306
ACT-72256	DEN-72469	LAS-72386	RIC-72401
ACY-72407	DLH-72745	LAX-72295	RNO-72488
AFN-72616	DRT-42261	LBB-72267	ROA-72411
AGS-72218	DSM-72546	LBF-72562	ROC-72529
AHN-72311	DSV-72523	LCH-72240	ROW-72268
ALB-72518	DTW-72537	LEX-72422	RST-72644
AMA-72363	EFK-72612	LGA-72503	SAC-72483
AST-72791	EKA-72594	LIT-72340	SAN-72290
AQQ-72220	ELP-72270	LND-72576	SAT-72253
ATL-72219	ELY-72486	LWS-72783	SAV-72207
AUS-72254	ESC-72648	LYH-72410	SCK-72492
AVL-72315	EUG-72693	MAF-72265	SEA-72793
AVP-72513	EVV-72432	MCN-72217	SFO-72494
AYS-72213	EYW-72201	MDW-72534	SGF-72440
BAL-72406	FAR-72753	MEI-72234	SHR-72666
BDL-72508	FAT-72389	MEM-72334	SHV-72248
BDR-72504	FCA-72779	MFR-72597	SJT-72263
BFL-72384	FHU-72273	MGM-72226	SLC-72572
BGM-72515	FNT-72637	MIA-72202	SLE-72694
BHM-72228	FSD-72651	MKC-72446	SLO-72433
BIL-72677	FSM-72344	MKE-72640	SMX-72394
BIS-72764	FTW-72259	MKG-72636	SPI-72439
BKW-72412	GEG-72785	MOB-72223	SPS-72351
BNA-72327	GGW-72768	MQT-72743	SSM-72734
BOI-72681	GJT-72476	MSD-72773	STC-72655
BOS-72509	GLD-72465	MSN-72641	STL-72434
BRO-72250	GLS-72242	MSP-72658	SUX-72557
BTV-72617	GRB-72645	MWN-72613	SYR-72519
BUF-72528	GRI-72552	NEW-72231	TCS-72271
BVE-72232	GRR-72635	N66-74484	TOP-72456
CAE-72310	GSO-72317	OAK-72493	TOU-72798
CAR-72712	GSP-72312	OFK-72536	TPA-72211
CHA-72324	GTF-72775	OKC-72353	TUL-72356
CHH-74494	HAT-72304	OLM-72792	TUS-72274
CHS-72208	HLN-72772	OMA-72553	TYS-72326
CKL-72229	HON-72654	ORD-72530	UCC-72385
CLT-72314	HOU-72243	ORL-72205	UIL-72797
CMH-72428	HTL-72638	PBI-72203	UMN-72349
CNK-72458	HTS-72425	PDT-72688	U67-72570
CON-72605	HVR-72777	PDX-72698	VBG-72393
COU-72445	H63-72348	PIA-72532	VCT-72255
CPR-72569	IAD-72403	PIH-72578	WAL-72402
CRP-72251	ICT-72450	PIT-72520	WMC-72583
CRW-72414	INL-72747	PUB-72464	YKM-72781
CYS-72564	INW-72374	PVD-72507	YUM-72280

482. AC—SEVERE WEATHER OUTLOOK NARRATIVE

REPORTING LOCATIONS:

MKC

483. AWW—AVIATION WEATHER WARNINGS

REPORTING LOCATIONS:

MKC

484. CNTM—CARF NOTAM

REPORTING LOCATIONS:

CARF OAK ZAN

485. CS1—CLIMATOLOGICAL REPORTS

REPORTING LOCATIONS:

70026 70086 70133 70200 70219 70231 70261 70273 70308 70316 70326 70361 70381 70398 72202 72206 72208 72219 72231 72250 72253 72266 72270 72278 72290 72304 72315 72327 72340 72353 72365 72386 72394 72405 72428 72429 72434 72445 72450 72469 72476 72483 72486 72494 72503 72509 72528 72534 72546 72562 72572 72583 72597 72617 72655 72662 72666 72681 72698 72712 72734 72745 72747 72764 72775 72785 72792 72797

486. FA—AVIATION AREA FORECASTS

REPORTING LOCATIONS:

ANC BOS CHI DFW FAI JNU MIA MKC MSY SFO SLC WBC

487. FD1/8—WINDS AND TEMPERATURE ALOFT FORECAST (DOMESTIC)

A. *REPORTING LOCATIONS/FD1*

ABI ABQ ABR ACK ACY ADK ADQ AGC AKN ALB ALS AMA ANC ANN ATL AVP AXN BAM BCE BDL BFF BHM BGR BIH BIL BLH BNA BOI BML BRL BOS BRO BRW BTI BTT BUF CAE CDB CHR CGI CLE CRP CHS SLL CRW CMH COU CSG CZI DAL DBQ DEN DIK DLN DLH DRT DSM ECK ELP EMI ELY EVV EYW FAI FAT FCA FLO FMN FOT FSD FSM FWA GAG GCK GEG GFK GGW GJT GLD GRB GTF HAT HOU HSV H51 H52 H61 ICT ILM IMB

IND INK INL JAN JAX JFK JNU JOT LAS LBB LCH LIT LKV LOU LRD LSE LWS MBW MCG MCW MDO MEM MGM MIA MKC MKG MLB MLS MOB MOT MQT MRF MSP MSY OKC OMA OMEONL ONT ORF ORT OTH OTZ PDX PFN PHX PIE PIH PIR PLB PRC PSB PSX PUB PWM RAP RBL RDM RDU RIC RKS RNO ROW SAC SAN SAT SAV SBA SEA SFO SGF SHV SIY SLC SNP SPI SPS SYR SSM STL Z92 TCC TLH TRI TUL TUS TVC TYS T01 T06 T07 WJF YKM ZUN 2XG 4J3 DATA

B. *REPORTING LOCATIONS/FD8*

ABI ABQ ABR ADK ADQ AGC AKN ALB ALS AMA ANC ANN ATL BAM BCE BET BFF BHM BIL BLH BNA BOI BOS BRO BRW BTI BTT BUF CAE CDB CLE CRP CRW CZI DAL DBQ DEN DIK DLN DRT DSM ECK ELP EMI FAI FAT FCA FMN GCK GEG GFK GGW GJT GRB GTF HOU ICT ILM IMB IND INK INL JAN JAX JFK JNU JOT LIT LKV LOU LRD MCG MDO MEM MIA MKC MOB MSP MSY OKC OME ONL ORT OTH OTZ PDX PIE PLB PRC PSB RAP RBL RDU RIC RKS RNO SAN SAT SBA SEA SFO SGF SHV SLC SNP SSM STL SYA TLH TRI TUS 2XG DATA

488. FD1—WINDS AND TEMPERATURE ALOFT FORECAST (CANADIAN)

REPORTING LOCATIONS:

FSP UHA WBZ WDA WDI WHW WDS WFA WFB WFC WFD WOH WOQ WUA WUB WUC WUD WUE WUF WUG WUH WUI WUJ WZB YAB YAD YAM YAY YAW YAZ YBC YBK YBR YCB YCG YCH YCO YDB YDF YDL YDR YEA YED YEG YEI YEN YEO YEU YEV YFB YFC YFN YFS YGK YGM YGR YGW YHY YHO YHZ YIC YIX YJA YJT YKA YKL YKN YLW YMA YMD YMJ YMM YMO YMV YNA YNI YNM YOC YOD YOJ YOW YPH YPU YQB YQD YQG YQH YQI YQK YQL YQM YQR YQT YQX YQY YRB YRL YRT YSA YSC YSD YSM YSU YSV YSY YTE YTL YTR YTZ YUB YUL YUW YUY YUX YVC YVM YVN YVP YVQ YVR YVV YWG YWK YXC YXE YXJ YXL YXS YXY YYB YYC YYD YYE YYF YYH YYL YYN YYQ YYR YYT YYU YYW YYY YYZ YZF YZH YZO YZP YZQ YZR YZS YZT YZV YZX ZFA FCST

489. FD2/9—WINDS AND TEMPERATURE ALOFT FORECAST (DOMESTIC)

REPORTING LOCATIONS:

See paragraph 487A.

490. FD2—WINDS AND TEMPERATURE ALOFT FORECAST (CANADIAN)

REPORTING LOCATIONS:

See Canadian FD1 list.

491. FD3/10—WINDS AND TEMPERATURE ALOFT FORECAST (DOMESTIC)

REPORTING LOCATIONS:

See paragraph 487B.

492. FD3—WINDS AND TEMPERATURE ALOFT FORECAST (CANADIAN)

REPORTING LOCATIONS:

See Canadian FD1 list.

493. FE1—EXTENDED OUTLOOKS

REPORTING LOCATIONS:

ABQ ACY ALB ARB ATL BHM BIS BOI BOS BUF BWI CAE CHI CLE CRW CYS DCA DEN DSM FSD FTW GTF ILG IND JAN LAX LBB LIT MEM MIA MKE MSP NEW NYC OKC OMA PDX PHL PHX PIT PWM RDU RIC RNO SAT SDF SEA SFO SLC STL TOP WBC

494. FO12--TEMPERATURE EXTREME FORECASTS AND PROBABILITY OF PRECIPITATION

REPORTING LOCATIONS:

ABE ABI ABQ ABR ACK ACT ACV ACY AGS AHN ALB ALO ALS ALW AMA APN AQQ AST ATL AUS AVL AVP BCE BDL BDR BFD BFF BFL BGM BGR BHM BIH BIL BIS BKW BNA BNO BOI BOS BPT BRL BRO BTR BTV BUF BVE BWI CAE CAK CAO CAR CDC CHA CHS CIR CLE CLT CMH CNK CON COS COU CPR CRP CRW CSG CVG CYS DAB DAG DAL DAY DBQ DCA DDC DEN DFW DLH DMN DRT DSM DTW EAU EKA EKN EKO ELP ELY ENV ERI ESF EUG EVV EWR EYW FAR FAT FCA FLG FMN FMY FNT FSD FSM FWA GAG GEG GGW GJT GLD GLS GRB GRI GRR GRW GSO GSP GTF GWO HAR HAT HBR HLN HON HSV HTL HTS HVR IAD IAH ICT ILG ILM IND INL INW IPT ISN ISP JAN JAX JBR JFK LAL LAN LAS LAX LBB LBF LCH LEX LFK LGA LGB LIT LND LNK LOL LSE LWS LYH MAF MCB MCI MCN MCW MDW MEI MEM MFR MGM MIA MKE MKG MLC MLI MOB MOT MQT MSN MSO MSP MSS MSY OAK OFK OKC OLM OMA ORD ORF ORL OTH PBI PDT PDX PHL PHX PIA PIH PIR PIT PNS POM PSB PUB PVD PWM RAP RBL RDM RDU RFD RIC RKS ROA ROC ROW RSL RST SAC SAN SAT SAV SBA SBN RNO HDNG

SCK SDF SEA SFO SGF SHR SHV SJT SLC SLE SMX SPI SPS SSM STC STJ STL SUX SYR TCC TCS TLH TOL TOP TPA TPH TRI TUL TUS TVC TXK TYS UIL VCT VTN WAL WMC YKM YNG YUM ZUN

495. FO22—OPERATIONAL FORECASTS

REPORTING LOCATIONS:

ABE ABI ABQ ABR ACK ACT ACV ACY AGS AHN ALB ALO ALW AMA APN AQQ AST ATL AUS AVL AVP BCE BDL BDR BFD BFF BFL BGM BGR BHM BIH BIL BIS BKW BNA BNO BOI BOS BPT BRL BRO BTR BTV BUF BVE BWI CAE CAK CAO CAR CDC CHA CHS CIR CLE CLT CMH CNK CON COS COU CPR CRP CRW CSG CVG CYS DAB DAG DAL DAY DBQ DCA DDC DEN DFW DLH DMN DRT DSM DTW EAU EKA EKN EKO ELP ELY ENV ERI ESF EUG EVV EWR EYW FAR FAT FCA FLG FMN FMY FNT FSD FSM FWA GAG GEG GGW GLS GJT GLD GRB GRI GRR GSO GSP GTF GWO HAR HAT HBR HLN HON HSV HTL HTS HVR IAD IAH ICT ILG ILM IND INL INW IPT ISN ISP JAN JAX JBR JFK LAL LAN LAS LAX LBB LBF LCH LEX LFK LGA LGB LIT LND LNK LOL LSE LWS LYH MAF MCB MCI MCN MCW MDW MEI MEM MFR MGM MIA MKE MKG MLC MLI MOB MOT MQT MSN MSO MSP MSS MSY OAK OFK OKC OLM OMA ORD ORF ORL OTH PBI PDT PDX PHL PHX PIA PIH PIR PIT PNS POM PSB PUB PVD PWM RAP RBL RDM RDU RFD RIC RKS RNM RNO ROA ROC ROW RSL RST SAC SAN SAT SAV SBA SBN SCK SDF SEA SFO SGF SHR SHV SJT SLC SLE SMX SPI SPS SSM STC STJ STL SUX SYR TCC TCS TLH TOL TOP TPA TPH TRI TUL TUS TVC TXK TYS UIL VCT VTN WAL WMC WLH YEG YKM YNG YPA YQB YQD YQR YQT YUM YVR YWG YYB YYC ZUN HDNG

496. FP1—STATE FORECASTS

REPORTING LOCATIONS:

ABQ ACY ALB ARB ATL BHM BIS BOI BOS BUF BWI CAE CHI CLE CRW CYS DEN DSM FSD FTW GTF ILG IND IPL JAN LAX LBB LIT MEM MIA MKE MSP NEW NYC OKC OMA PDX PHL PHX PIT PWM RDU RIC RNO SAT SDF SEA SFO SLC SNS STL TOP WBC

497. FP3—FORECAST EXPLANATIONS

REPORTING LOCATIONS:

BOI CLE GTF LAX PDX PHX SEA SFO SLC RNO TOP STL SDF IND CHI OMA DSM DEN ARB MKE MSP FSD BIS CYS

498. FP4—CODED CITY FORECASTS

REPORTING LOCATIONS:

ABQ ALB ARB ATL BHM BIS BOI BOS BUF CAE CHI CLE CRW CYS DEN DSM FSD FTW GTF IND JAN LAX LBB LIT MEM MIA MKE MSP NEW NYC OKC OMA PDX PHL PHX PIT PWM RDU RNO SAT SDF SEA SFO SLC STL TOP WBC

499. FP5—ZONE FORECASTS

REPORTING LOCATIONS:

BOI BOS CHI CLF CRW CYS DCA FSD GTF LAX MKC MIA MKE MSP NYC OMA PDX PHX PWM RNO SEA SFO SLC WBC

500. FT—AVIATION TERMINAL FORECASTS (ALASKAN—DOMESTIC—HAWAIIAN)

REPORTING LOCATIONS:

ABE ABI ABQ ABR ABY ACK ACT ACV ACY ADM ADQ AGC AGS AHN AKN ALB ALI ANC ANN ALO ALS ALW AMA ANB AND AOO APN ART ASE AST ATL ATY AUG AUS AUW AVL AVP AXN

BAB BAF BCE BDL BDR BET BFD BFF BFI BFL BGM BGR BHM BIG BIH BIL BIS BJI BKE BKW BLF BLH BLI BNA BOI BOS BPT BRD BRL BRO BRW BTL BTM BTR BTT BTV BUF BUR BWG BWI BYI BZN

CAE CAK CAR CDB CDC CDR CDS CDV CEC CGI CHA CHO CHS CID CIU CKB CLE CLL CLT CMH CMI CMX CNM CNU CON COS COU CPR CRE CRP CRW CSG CSV CTB CVG CYS

DAB DAG DAL DAN DAY DBQ DCA DDC DEC DEN DET DFW DHN DHT DIK DLG DLH DLS DMN DPA DRA DRT DSM DTW DUG DUJ BYI

EAT EAU ECG EED EGE EKN EKO ELD ELM ELP ELY ENA ENV EPH ERI ESF EUG EVV EWB EWN EWR EYW

FAI FAR FAT FAY FCA FKL FLG FLL FLO FMN FMY FNT FOE FRM FSD FSM FWA FYV

→ GAG GAL GCK GCN GEG GFK GFL GGG GGW GJT GKN GLD GLS GMU GNV GPT GRB GRI GRR GSO GSP GST GTF GUP GWO

HBR HCA HIB HKY HLG HLN HNL HOB HOM HOT HOU HPN HQM HRL HRO HSV HTS HUF HUL HUT HVN HVR HYA

IAD IAG IAH ICT IDA ILG ILI ILM IND INK INL INT INW IPL IPT ISN ISR ITH ITO

JAC JAN JAX JBR JFK JHW JLN JMS JNU JST JXN

KOA KTN

LAF LAN LAR LAS LAX LBB LBF LCH LEB LEX LFK LFT LGA LGB LGU LIH LIT LMT LND LNK LNS LNY LOL LOZ LRD LSC LSE LUK LVS LWS LWT LYH

MAF MBS MCB MCG MCI MCN MCO MCW MDT MDW MEI MEM MER MFD MFE MFR MGM MGW MIA MIE MIV MKC MKE MKG MKK MKL MLB MIE MLC MLF MLI MLS MLU MOB MOT MPV MQT MRB MRY MSL MSN MSO MSP MSS MSY MUE

OAK OCV OFK OGD OGG OKC OLM OMA OME ONT ORD ORF ORH ORT OTH OTM OTZ OWB

PAH PAQ PBF PBI PDT PDX PFN PHF PHL PHX PIA PIB PIH PIR PIT PKB PLN PNC PNE PNS POU PRB PRC PSB PSC PSG PSP PUB PVD PVU

RAP RBL RDD RDG RDM RDU RFD RIC RIW RKS RNO ROA ROC ROW RSL RST RWI RWL

SAC SAF SAN SAT SAV SBA SBN SBY SCC SCK SDF SEA SFF SFO SGF SGY SHR SHV SIT SJC SJT SLC SLE SLK SLN SMF SMX SNA SNP SN3 SPI SPS SSI STJ STL STS SUX SWF SYR

TAL TCC TCL TCS TEB TKA TLH TOL TOP TPA TPH TRI TTD TUL TUS TVC TVL TWF TXK TYR TYS

UCA UIN UKI UNK UNV

VCT VDZ VLD VNY VRB

WJF WMC WRG WRL

YAK YIP YKM YNG YUM

ZZV

501. FT—AVIATION TERMINAL FORECASTS (CANADIAN)

REPORTING LOCATIONS:

FSP NIL UBZ WLG YAM YAW YAY YAZ YBC YBE YBG YBK YBR YBT YCA YCB YCD YCG YCH YCL YCO YDA YDB YDF YDN YED YEG YEU YEV YFB YFC YFS YGA YGM YGP YGQ YGR YGV YGW YGX YGY YHD YHI YHM YHO YHU YHY YHZ YIC YJT YKA YKL YLG YLT YLW YMA YMD YMJ YMM YMO YMT YMV YMX YNA YNM YOD YOJ YOW YOX YPA YPE YPG YPL YPR YPY YQA YQB YQD YQF YQG YGH YQI YQK YQL YQM YQQ YQR YQT YQU YQV YQW YQX YQY YQZ YRB YRI YRL YRQ YRV YSA YSB YSC YSJ YSM YSU YSV YSY YTH YTL YTR YTS YTZ YUB YUC YUL YUN YUR YUV YUW YUX YUY YUZ YVC YVM YVN YVO YVP YVQ YVR YVV YWA YWG YWK YWL YWP YWR YXC YXD YXE YXH YXJ YXL YXR YXS YXT YXU YXX YXY YYB YYC YYD YYE YYF YYG YYJ YYL YYN YYQ YYR YYT YYU YYW YYY YYZ YZD YZE YZF YZH YZP YZS YZT YZU YZV YZX YZY ZUE ZUM

502. FTUS—AVIATION TERMINAL FORECASTS (MILITARY)

REPORTING LOCATIONS:

ADW AEX BAB BSM DLF DOV DYS EDW EFD END FWH GRK HMN HST IAB LSV LTS MCC MCF MER MGE MHR MIB MUO MYR NBE NGP NGU NGC NHK NID NIP NIR NKX NLC NPA NQI NTD NUQ NZJ NZY OAR PAED PAEI PHNA REE RIV RND SBD SKA SKF SUU SZL TCM TIK VBG VCV WRI

503. FT—AVIATION TERMINAL FORECAST (MEXICAN)

REPORTING LOCATIONS:

ACA CEN CJS CUN CUU CZM GDL HMO LAP MAM MEX MID MTY MXL MZT NLD NOG PVR TAM TAP TIJ VER

504. FZ8—MARINE FORECASTS (PACIFIC)

REPORTING LOCATIONS:

LAX PDX SEA SFO

505. FZ8—MARINE FORECASTS (GREAT LAKES)

REPORTING LOCATIONS:

ARB CHI CLE

506. FZ8—MARINE FORECASTS (ATLANTIC AND GULF OF MEXICO)

REPORTING LOCATIONS:

BOS BUF CAE DCA MIA NEW NYC PHL PWM RDU SAT WBC

507. FZ8—MARINE FORECASTS

REPORTING LOCATIONS:

BOS MIA NEW SFO WBC

508. NOUS1—GENOT SERVICE A

REPORTING LOCATIONS:

DUP WMSC KRWA

509. NOUS3—GENOT SERVICE C

REPORTING LOCATIONS:

DUP WMSC KRWA

510. SA—HOURLY AVIATION WEATHER (DOMESTIC)

REPORTING LOCATIONS:

ABE ABI ABQ ABR ABY ACK ACT ACV ACY ADM AGC AGS AHN AIA AKO ALB ALI ALN ALO ALS ALW AMA AMG ANB AND ANW AOO APC APN AQQ ARA ARB ARG ARR ART ASE AST ATL ATW ATY AUG AUO AUS AUW AVX AVP AWM AXN AZO

BAF BAM BBW BCE BDL BDR BED BEH BFD BFF BFI BFL BFM BGM BGR BHB BHM BID BIE BIH BIL BIS BJI BKE BKL BKW BLF BLH BLI BLU BMG BMI BML BNA BNO BNY BOI BOS BOW BPI BPT BRD BRL BRO BTL BTM BTR BTV BUF BUO BUR BVE BVO BVY BWI BWG BYI BZN

CAE CAG CAK CAO CAR CCR CDC CDR CDS CDW CEC CEW CEZ CGF CGI CGX CHA CHO CHS CIC CID CIU CKB CKV CLE CLL CLM CLT CMH CMI CMX CNK CNM CNO CNU COD CON COS COT COU CPR CPS CRE CRP CRQ CRW CSG CSM CSV CTB CTY CVG CWA CXY CYS CZK CZZ

DAB DAG DAL DAN DAY DBQ DCA DDC DEC DEN DET DFW DHN DHT DIK DKX DLH DLN DLS DMN DNV DPA DRA DRO DRT DSM DTD DTF DTW DUA DUG DVL DUJ DYR DXR

EAR EAT EAU ECG EED EEN EGE EKM EKN EKO ELD ELM ELP ELY EMP EMT ENV E03 E74 EPH ERI ESC ESF EUG EVV EVW EWB EWN EWR EYW

FAR FAT FAY FCA FCL FDY FHU FKL FLG FLL FLO FMN FMY FNT FOD FOK FRG FRM FSD FSM FTW FTY FUL FWA FYV

GAD GAG GBG GCC GCK GCN GDP GDV GEG GFK GFL GGG GGW GJT GLD GLH GLS GNG GNV GON GPT GRB GRI GRR GRW GSO GSP GTF GTR GUC GUP GWO

HAT HBR HDN HEZ HFD HGR HHR HIB HIE HIO HKY HLC HLG HLN HOB HON HOT HOU HPN HQM HRL HRO HSI HSP HSS HSV HTL HTS HUE HUL HUM HUT HVN HVR HWD → HYA HYS

IAD IAH ICT IDA IGM ILG ILM IMT IND INK INL INT INW IPL IPT IRK ISN ISO ISP ITH IWD IXD

JAC JAN JAX JBR JCT JDN JEF JFK JHW JKL JLN JMS JST JVL JXN

K20

LAF LAM LAN LAR LAS LAX LBB LBE LBF LCH LCI LEB LEX LFK LFT LGA LGB LGC LGD LGU LHX LIC LIT LMT LND LNK LNP LNR LNS LOL LOU LOZ LRD LSE LUK LVK LVM LVS LWB LWM LWS LWT LXN LXV LYH LZZ

MAF MBL MBS MCB MCI MCK MCN MCO MCW MDH MDT MDW MEH MEI MEM MFD MFE MFR MGL MGM MGR MGW MHE MHK MHN MHS MHT MIA MIE MIV MKC MKE MKG MKL MKT MLB MLC MLD MLF MLI MLS MLU MMO MNM MOB MOD MOT MPV MQM MQT MRB MRF MRY MSL MSN MSO MSP MSS MSY MSV MTJ MTO MTW MWA MVN MVY MWC MWH MWL MWN MWS MYV

NEW

OAJ OAK OE4 OFK OGD OGS OJC OKC OLF OLM OLU OMA ONT ONP ORD ORF ORH ORL OSH OSU OTG OTH OTM OWB OWD OWY OXR O2V O87

PAE PAH PBF PBI PDT PDX PFN PGA PGO PHF PHL PHP PHX PIA PIB PIE PNS POC POU PRB PRC PRX PSB PSC PSF PSP PSX PTK PTN PUB PUC PUV PUW PVD PVU PVW PWA PWM PWT P02 P07 P11 P24 P28 P35 P38 P39 P58 P60 P67 P68 P70 P73 P75

RAL RAP RBG RBL RDD RDG RDM RDU RFD RHI RIC RIW RLD RKS RKD RMG RNO ROA ROC ROW RSL RST RUT RWF RWH RWI RWL

SAC SAF SAN SAT SAV SBA SBN SBP SCK SDB SDF SDM SDY SEA SEE SFB SFF SFO SGF SHD SHN SHR SHV SIY SJC SJT SLC SLE SLK SLN SMF SMN SMO SMP SMX SNA SNS SNY SOP SPA SPI SPS SRQ SSI SSM SSU STC STJ STL STS SUN SUS SUX SVC SVE SWF SXT SYR S06 S80 S86

TAD TCC TCL TCS TDO TEB TIW TIX TLH TNT TOA TOL TOP TPA TRK TRL TRI TRM TTD TUL TUP TUS TVC TVF TVL TWF TXK TYR TYS

UCA UIL UIN UKI UOX U24 U28 U31 U67 VCT VEL VIH VIS VLD VNY VRB VSE VTN WAL WDG WEY WJF WMC WRL WYS X53

YIP YKM YKN YNG YUM Y26

ZZV

1K5 1V1 2V9 3DU 3HT 30I 3SE 3V9 4BK 4BL 4BQ 4BW 4DG 4HV 4LJ 4LW 4OM 4SV 4V5 5I3 5MK 5R0 6B2 6V1 6V8 7A9 7R2 7R3 7R4 7TB 9R9 63S 87Q 9B2 19R

511. SA—HOURLY AVIATION WEATHER (MEXICAN)

REPORTING LOCATIONS:

ACA CEN CME CPE CTM CUL CUU CVM CZM DGO GDL GYM HMO LAP LMM MEX MID MOV MTY MZT NAU NCG NOG PNT PPE PPR PVR SLP TAM TAP TMN TRC TUX VER

512. SA—HOURLY AVIATION WEATHER (HAWAIIAN)

LIH BKH OGG HKP HNL MKK LNY ITO KOA MUE HWN HFO

513. SA—HOURLY AVIATION WEATHER (MILITARY)

REPORTING LOCATIONS:

ADW AEX AGR

BAB BAD BGS BIX BKF BLV BSM BYH

CBM CEF CHD COF CVS CZZ

DAA DLF DMA DOV DPG DYS

EDW EFD END

FAF FBG FCS FFO FLV FME FMH FOE FRI FSI FTK FWH

GBN GFA GRF GRK GSB GUS GVW

HIF HMN HOP HRT HST

IAB IAG INR

LCK LFI LHW LIZ LRF LSF LSV LST LUF

MCC MCF MER MGE MHR MIB MMT MTC MTN MUO MXF MYR

NAB NAO NBC NBE NBG NBU NCA NCO NEA NEL NFL NGP NGU NGZ NHK NHZ NID NIP NIR NKT NKX NLC NMM NPA NQA NQI NQX NRB NRC NRS NSE NSI NTD NTU NUC NUQ NUW NXX NYG NZC NZJ NZW NZY N5G

OAR OCS OFF OSC OZR

PACZ PAED PAEH PAEI PAFB PAFR PAGA PAIM PALU PAM PASV PASY PATC PATL PBG POB POE PSM 5BR

RCA RUR REE RIV RME RND

SAW SBD SEM SGH SKA SKF SRF SCC SUU SZL SZN

TBN TCM TIK TOI

VAD VBG VCV VOK VPS

WRB WRI

X68 01R

514. SA—HOURLY AVIATION WEATHER (CANADIAN)

REPORTING LOCATIONS:

FSP UVW WAH WAR WBA WBD WBF WBI WBJ WBK WBX WBY WCL WCN WCP WCS WCU WDI WDL WDM WDS WDV WEH WEI

WEU WEZ WFL WFJ WFM WFN WFV WGB WGE WGN WGM WGQ WHC WHE WHJ WHL WHT WIK WJA WKC WKG WKY WLB WLH WLM WNH WLO WLX WLY WMW WMP WNI WOS WPF WPK WPZ WQC WRD WRP WSA WSQ WTL WUU WUV WUW WVM WVT WXK WYI YAE YAM YAW YAY YAZ YBB YBC YBE YBG YBL YBR YBT YCB YCD YCG YCH YCL YCO YCT YDA YDB YDC YDF YDN YDQ YEC YED YEG YEN YEO YET YEV YFC YFO YFR YFE YGA YGD YGH YGK YGP YGR YGV YGW YGX YHB YHD YHE YHM YHU YHY YHZ YIB YIX YJT YKA YKF YKL YLD YLJ YLL YLW YMA YMJ YMM YMO YMT YMV YNE YNM YOC YOC YOJ YOW YPA YPB YPE YPG YPH YPQ YPR YPW YPY YQA YQB YQD YQF YQG YQH YQI YQK YQL YQM YQQ YQR YQT YQU YQV YQW YQX YQY YQZ YRB YRJ YRL YRM YRQ YRV YSB YSC YSJ YSM YSN YSU YSY YTH YTL YTR YTS YTW YTZ YUI YUK YUL YUR YUS YUX YUY YUZ YVC YVG YVM YVN YVO YVP YVQ YVR YVV YWA YWG YWK YWL YWR YWY YXC YXD YXE YXH YXI YXJ YXL YXQ YXR YXS YXT YXU YXX YXY YXZ YYB YYC YYD YYE YYF YYG YYJ YYL YYN YYQ YYR YYT YYU YYW YYY YYZ YZD YZE YZF YZH YZP YZR YZS YZT YZU YZV YZW YZX YZY ZPC ZUE ZUM

515. SA—HOURLY AVIATION WEATHER (ALASKAN)

REPORTING LOCATIONS:

ADK ADQ AGN AIN AK42 AKN ANC ANI ANN ATU BET BIG BRW BTI BTT CDB CDV CRC CSH CYT DLG DUT ELV ENA ENN FAI FIV FNR FWL FYU GAM GKN GST HOM ILI JNU JOH KAE KPC KSM KTN LNI MCG MDO MHM MLY MRI MXY OLI OME ORT OTZ PAQ PIZ PSG PTH PTI PUO RBY SCC SDP SGY SIT
→ SKJ SKW SNP SSR TAL TKA UMM UMT UNK VDZ VWS WCR WRG YAK Z00 Z12 Z20 Z22 Z26 Z27 Z30 Z49 Z76 5BI 5CE 5EA 5HN 5HR 5GN 5PX 5SO 5WD 5WO 5WT

516. SD—RADAR WEATHER REPORT

REPORTING LOCATIONS:

ALB ALO AMA APN AQQ ATL AUS AYS BAD BDL BFF BFS BGM BGS BIS BLV BNA BOS BRO BTR BUF BYH CAE CAK CHH CHS CKL CLE CMH CNK COS COU CRP CVG CYS DAB DLF DLH DSM DTW EEW EVV EYW FAR FEW FFO FNT FSD FSM FWA FWH GK GFA GGG GLD GLS GRI GSB GVW HAT HDO HMN HON HST HSV HTL IAB ICT ILM IND ISN JAN JKL LBB LBF LCH LIC LIZ LRF MAF MCF MCI MCN MEI MFR MGE MIA MIB MKC MKG MLI MMO MOB MSN MSO MSP MTC MXF NHK NHZ NPA NQA NYC OFF OFK OKC ORH OSC PAM PBG PIT PMD POB RAP RCA RDR RDU RME RND RST SAC SAW SDF SEM SEP SHV SIL SJT SPI SPS STL TBW TIK TOP TRI TUL UMN VCT WRI XNK ZAB ZLC ZSE1M1 3NO 7VM

517. SI—SYNOPTIC SURFACE REPORTS—INTERMEDIATE

REPORTING LOCATIONS:

NNCR 72349 72402 72433 72599 72613 72648 72650 72676 72683 72695 72741 72743 72755 72789 72798 74494

518. SM—SYNOPTIC SURFACE REPORTS—MAIN

REPORTING LOCATIONS:

70026 70086 70133 70200 70219 70231 70261 70273 70308 70316 70326 70350 70361 70398 70454 72201 72202 72203 72205 72206 72207 72208 72211 72214 72217 72218 72219 72223 72226 72228 72231 72234 72235 72240 72242 72243 72248 72250 72251 72253 72254 72255 72256 72259 72261 72263 72265 72266 72267 72268 72270 72274 72278 72280 72290 72295 72304 72306 72308 72310 72311 72312 72314 72315 72317 72324 72326 72327 72334 72340 72344 72348 72349 72351 72353 72356 72363 72365 72374 72384 72386 72389 72395 72401 72402 72403 72405 72406 72407 72408 72410 72411 72412 72414 72421 72422 72423 72425 72428 72429 72432 72433 72434 72438 72439 72440 72445 72446 72450 72451 72456 72458 72464 72465 72469 72476 72486 72488 72492

72494 72503 72504 72507 72508 72509 72513 72515 72517 72518 72519 72520 72521 72523 72524 72525 72528 72529 72530 72532 72533 72534 72535 72536 72537 72544 72546 72547 72552 72553 72556 72557 72562 72564 72569 72570 72572 72576 72578 72583 72591 72594 72597 72599 72605 72608 72608 72612 72613 72614 72615 72616 72617 72618 72635 72637 72638 72640 72641 72644 72645 72648 72650 72651 72652 72654 72655 72658 72659 72662 72666 72676 72677 72681 72683 72688 72693 72694 72698 72712 72734 72741 72743 72745 72747 72753 72755 72764 72768 72772 72773 72775 72777 72779 72781 72784 72785 72789 72791 72793 72797 74465 74483 74484 74486 74494 74595 74798 78016

519. SR1—CROP REGION, RIVER, CORN AND WHEAT, FRUIT SERVICE, FIRE WEATHER, AND HORTICULTURAL REPORTS

a. *EASTERN REPORTING LOCATIONS:*

ACT AGC AGS ALB ATL AUS AVL BGM BNA BRO BTV BUF CAE CLE CMH CNK CON CRP CRW CVG DCA DDC DFW DLH DRT DSM ESC EVV FWA GRB GRR HAR HON HOU ICT IND JAN LAN LCH LIT LSE MCN MEM MGM MKC MKE MKG MLI MOB MSP MSY OFK OKC OMA OSW PNF PUB RDU ROC SAT SDF SHV STL SUX TOL TOP TTN TUL TYS

b. *WESTERN REPORTING LOCATIONS:*

ABQ AST BIL BIS BOI CYS DEN ELP FAR FAT FCA GEG GGW GJT GTF HLN HVR LAX LWS MFR MSO SAC SLC

520. SW—SUPPLEMENTARY AVIATION WEATHER

REPORTING LOCATIONS:

BKX BMI BWD CAO CPS CVN DNV E23 FOD GNT HCA IYK LBL LHU LRU LWS MDH MEV MTO MVN N40 ONM PKV PQI PSF PSK PWT RUI RWI SGU TTN U17 U71 3OI 3SE 3TH 4CR 4GB 4MY 5B6

521. SX—DEGREE-DAY REPORT

REPORTING LOCATIONS:

ABQ ALB ATL BHM BIS BOI BOS BUF CAE CHI CLE CRW CYS DCA DEN DSM DTW FSD FTW GTF IND JAN LAX LBB LIT LOU MEM MIA MKC MKE MSP MSY NYC OKC OMA PDX PHL PHX PIT PWM RDU SAT SDF SEA SFD SFO SLC STL TOP

522. SYNS—TRANSCRIBED WEATHER BROADCAST SYNOPSES

REPORTING LOCATIONS:

ABQ ALB ARB ATL BHM BIS BOI BOS BUF CAE CHI CLE CRW CYS DEN DFW FSD GTF IND JAN LAX LBB LIT MEM MIA MKE MSP MSY NYC OKC OMA PDX PHL PHX PIT PWM RDU RNO SAT SDF SEA SFO SLC STL TOP WBC

523. TWAMD—TRANSCRIBED WEATHER REPORTS

REPORTING LOCATIONS:

See (SYNS) list.

524. TWEB—TRANSCRIBED WEATHER BROADCAST

REPORTING LOCATIONS:

001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037 038 039 040 041 042 043 044 045 046 047 048 049 050 051 052 053 054 055 056 057 058 059 060 061 062 063 064 065 066 067 068 069 070 071 072 073 074 075 076 077 078 079 080 081 082 083 100 101 102 103 104 105 106 107 108 190 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 380 381 382 383 384 385 386 390 391 392 393 394 395 396 397 398 399 403 404 405 406 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434

Section 4. WEATHER COLLECTIVES (USE RC PROCEDURES)

→ 581. WMSC DATA BASE

AAAK36 KWBC
AAPA38 KWBC
AAUS30 KWBC
AAUS31 KWBC
AAUS32 KWBC
AAUS33 KWBC
AAUS34 KWBC
AAUS35 KWBC
AAWMS TEST
ABAK1 PANC
ABAK2 PANC
ABCA1 KMIA
ABCA20 KMIA
ABUS1 KWBC
ABUS11 KWBC
ABUS12 KWBC
ABUS13 KWBC
ABUS14 KWBC
ABUS15 KWBC
ABUS2 KWBC
ABUS23 KWBC
ABUS24 KWBC
ABUS25 KWBC
ABUS26 KWBC
ABUS3 KWBC
ABUS4 KWBC
ABUS6 KWBC
ABXX7 KWBC
ABXX11 KMIA
ABXX11 KSFO
ABXX11 PHNL
ABXX15 KMIA
ABXX15 KSFO
ABXX15 PHNL
ABXX13 KWBC
ABXX5 KWBC
ABXX6 KWBC
ACUS KGWC
ADMN PADK
ADMN PANC
ADMN1 KNKA
ADMN1 KWBC
ADMN1 PANC
ADMN1 PHNL
ADMN5 PHNL
ADMN41 PHTO
ADMN41 PHLI
ADMN41 PHOG
ADMN58 KWBC
AHXN1 KWBC
AHXN2 KWBC
AHXN3 KWBC
AHXN4 KWBC
ARUS40 KABQ
ARUS40 KPMD
ARUS40 KSEA
ARUS40 KSLC
ASAK PANC
ASUS1 KWBC
ASUS10 KMKC
ASXX21 EGRR
AXAC1 NSS
AXCA20 KMIA
BIXX KCMC
CIRNOT1
CSAA1 FASE
CSAA1 SABM
CSAD1 DEMS
CSAG1 SABM
CSAG2 SABM
CSAK1 PANC
CSAK12 PANC
CSAL1 DAMM
CSAO1 GOOY
CSAO20 GOOY
CSAO21 GOO
CSAR1 OEJD
CSAS1 RJTD
CSAS1 VTBB
CSBA1 MYNN
CSBE MXKF
CSBM1 VBRR
CSBX1 EBBR
CSBZ1 SBBR
CSBZ2 SBBR
CSCA1 MKJP
CSCA1 MACC
CSCA1 MDSD
CSCA1 MFFF
CSCA1 MHTG
CSCA1 MJSJ
CSCA1 MKPB
CSCA1 MKPO
CSCA1 MKPP
CSCA1 MNMG
CSCA1 MRSJ
CSCA1 MSLP
CSCA1 MZBZ
CSCL1 DEMS
CSCN1 CWTO
CSCO1 MCBO
CSCY1 LCRA
CSCZ1 OKPR
CSDD1 DIPD
CSDL1 EDZW
CSEQ1 SEQU
CSFA1 EKMI
CSFG1 MOOO
CSFI1 EFKL
CSFM1 GMMC
CSFR1 LFPW
CSGI1 EGRR
CSGL1 EKMI
CSHK1 VHHH
CSHU1 HABP
CSIE1 EIDB
CSIL1 BIRK
CSIN1 DEMS
CSIR1 OIII
CSIS1 LLBD
CSJP1 RJTD
CSJP2 RJTD
CSKO1 RKSL
CSKU1 NCRG
CSME1 LIIB
CSME2 LIIB
CSMU1 VHHH
CSMX MXBA
CSNC1 NWWB
CSNL1 EHDB
CSNO11 ENMI
CSNZ1 NZKL
CSOS1 LOWM
CSPA1 PHNL
CSPH1 RPMK
CSPH1 RPMM
CSPK1 OPKC
CSPL1 SOWR
CSPM1 MBHO
CSPO1 LPPT
CSPS1 NFFN
CSRA1 RJTD
CSRA10 RUHB
CSRA10 RUNW
CSRA10 RUTK
CSRO1 YRBK
CSRS10 RUMS
CSSA1 MLTM
CSSN1 ESWI
CSSP1 LEMM
CSSR1 WSSS
CSSW1 LSSW
CSSY1 OSDI
CSTK1 NSAP
CSTH1 VTBB
CSTU1 LTAA
CSUK1 EGRR
CSUY1 SUMU
CSVN1 MVBS
CSXX1 KWBC
CSXX1 LFPW
CSXX2 KWBC
CSXX3 KWBC
CSXX4 KWBC
CSXX5 KWBC
CSYG1 LYBM
CSZA1 FAPR
CUBE MXKF
CUCA1 MFFR
CUFG1 MOOO
CUMX MXBA

DFAK1 KWBC
DFCA1 KWBC
DFHW1 KWBC
DFUS1 KWBC
DFXX21 KWBC
FABA20 MYNN
FABZ SBBR
FACA KMIA
FACA MPHO
FACA MMMX
FACA1 MHTG
FACN1 CWHX
FACN1 CWUL
FACN1 CYQX
FACN1 CWVR
FACN1 CYXY
FACN1 CYYZ
FACN1 CWEG
FACN1 CWWG
FACN2 CWUL
FACN2 CWEG
FACN2 CWWG
FACN2 CYQX
FACN3 CWEG
FACN3 CWUL
FACN3 CWWG
FACN4 CWWG
FACN5 CWEG
FACN5 CWWG
FACN6 CWEG
FACO MCBO
FAHW PHNL
FANT1 KWBC
FANT2 KWBC
FAPA1 KWBC
FAPR SPIM
FASA20 MKPP
FAUS40 KSLC
FAVN MVMI
FBAG20 SABM
FBAG21 SABM
FBAK1 PANC
FBHW PHNL
FBNT1 KWBC
FBNT2 KWBC
FBPA1 KWBC
FBPA2 KWBC
FBPS5 NZAK
FBPS10 NFFN
FBPS11 NFFN
FBPS14 NFFN
FBPS15 NFFN
FCGM PGUM
FCJP7 KAWN
FDAK4 KWBC
FDCA1 KWBC
FDCA2 KWBC
FDCA3 KWBC
FDCA4 KWBC
FDCA5 KWBC
FDCA6 KWBC
FDCN1 KWBC
FDCN2 KWBC
FDCN3 KWBC
FDCN40 KWBC
FDCN41 KWBC
FDCN42 KWBC
FDHW PHNL
FDUS4 KWBC
FDUS5 KWBC
FDUS6 KWBC
FDUS7 KWBC
FEUS40 KWBC
FHPA1 KSFO
FHPA1 PHNL
FHPN KSFO
FJUE50 KGWC
FJUE51 KGWC
FJUE52 KGWC
FJUE53 KGWC
FJUE54 KGWC
FJUE55 KGWC
FJUE56 KGWC
FJUS47 KGWC
FJUS57 KGWC
FJXN1 KWWA
FKAK1 PAFA
FKAK1 PANC
FKUS1 KWBC
FKUS2 KWBC
FMAK1 KWBC
FMUS41 KWBC
FMUS42 KWBC
FOAK1 PANC
FOAK2 PANC
FOAK3 PANC
FOAK5 PAED
FOAK6 PAED
FOAK7 PAED
FOAK8 PAED
FOHW1 PHNL
FOHW2 PHNL
FOHW3 PHNL
FOUS15 KWBC
FOUS16 KWBC
FOUS17 KWBC
FOUS40 KWBC
FOUS41 KWBC
FOUS42 KWBC
FOUS43 KWBC
FOUS50 KWBC
FOUS51 KWBC
FOUS52 KWBC
FOUS53 KWBC
FOUS54 KWBC
FOUS55 KWBC
FOUS56 KWBC
FOUS57 KWBC
FOUS60 KWBC
FOUS61 KWBC
FOUS62 KWBC
FOUS63 KWBC
FOUS64 KWBC
FOUS65 KWBC
FOUS66 KWBC
FOUS67 KWBC
FOUS68 KWBC
FOUS69 KWBC
FOUS70 KWBC
FOUS71 KWBC
FOUS72 KWBC
FOUS73 KWBC
FOUS74 KWBC
FOUS75 KWBC
FOUS76 KWBC
FOUS77 KWBC
FOUS78 KWBC
FOUS80 KWBC
FOXX2 XXXX
FPAK1 PAFA
FPAK1 PANC
FPAK10 PAFA
FPAK10 PAJN
FPAK11 PADQ
FPAK11 PAFA
FPAK11 PAJN
FPAK11 PANC
FPAK11 PANT
FPAK11 PAOM
FPAK11 PAVD
FPAK11 PAYA
FPAK12 PAFA
FPAK12 PAJN
FPAK12 PANC
FPAK13 PAFA
FPAK13 PANC
FPAK14 PANC
FPAK15 PANC
FPAK16 PANC
FPAK18 PAFA
FPAK18 PAJN
FPAK18 PANC
FPAK19 PAFA
FPAK19 PAJN
FPAK2 PAFA
FPAK2 PAJN
FPAK2 PANC
FPAK4 PAFA
FPAK4 PAJN
FPAK4 PANC
FPAK5 PAFA
FPAK5 PAJN
FPAK5 PANC
FPAK51 PAFA
FPAK51 PANC
FPAK6 PANC
FPCA1 MJSJ
FPCA10 MJSJ
FPCA20 MJMJ
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